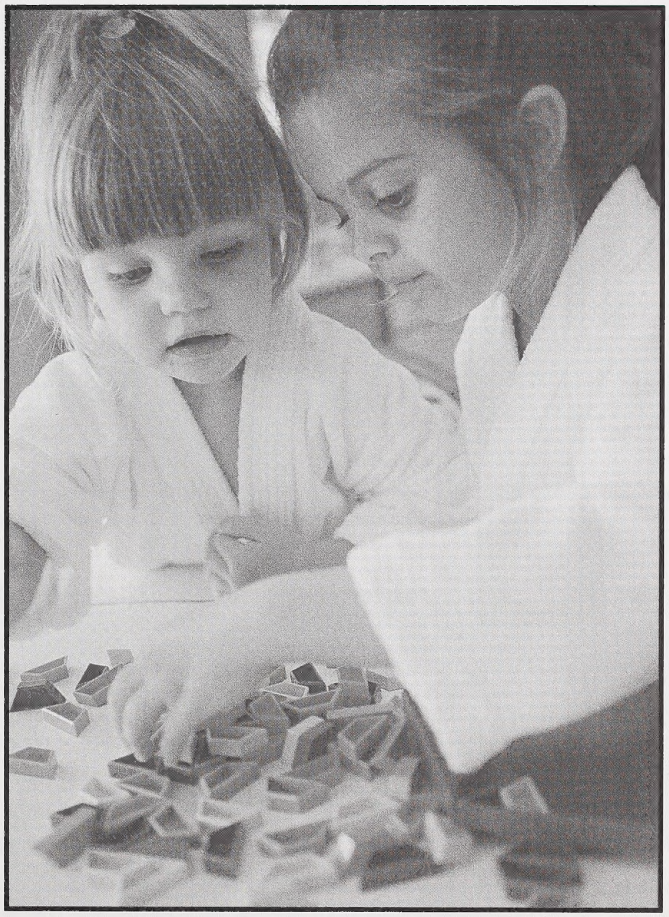
Grade 9

Mathematics

Module 9

Distance Learning

Mathematics Module 9



Distance Learning

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Module 9
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This document is intended for	
Students	✓
Teachers	✓
Administrators	
Home Instructors	✓
General Public	
Other	

The Learning Technologies Branch has an Internet site that you may find useful. The address is as follows:

http://www.learning.gov.ab.ca/ltb

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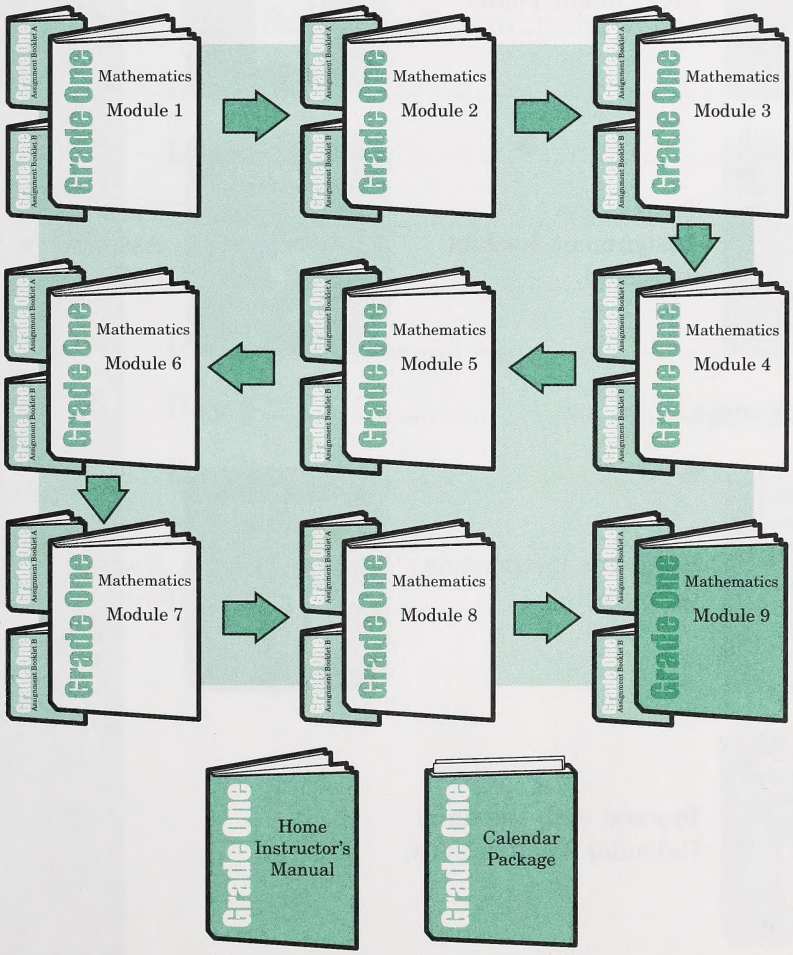
Course Overview and Basic Components

Welcome to the Grade One Mathematics program.

The booklet you are presently reading is called a Student Module Booklet. It will take you through the course and show you, step by step, what to do with the student and how to do it. The activities you do will prepare the student for the assignments.

Grade One Mathematics contains nine modules. Each module has two Assignment Booklets. The module you are working on is highlighted in a darker colour. The two other basic course components—a Home Instructor's Manual and a Calendar Package—are also highlighted.



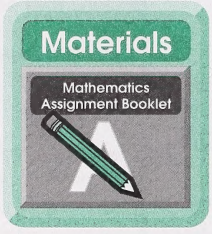
Visual Cues

Throughout the Grade One Mathematics program, you will find visual cues that indicate a material needed or an activity to carry out. Read the following explanations to discover what each icon prompts you to do.

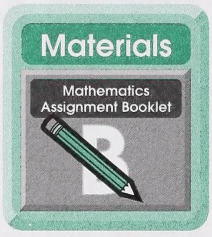
Icons: Materials

Place an item in the Student Folder.

Turn to the Home Instructor's Manual for further information.



Turn to the Assignment Booklet indicated.



Turn to the Assignment Booklet indicated.

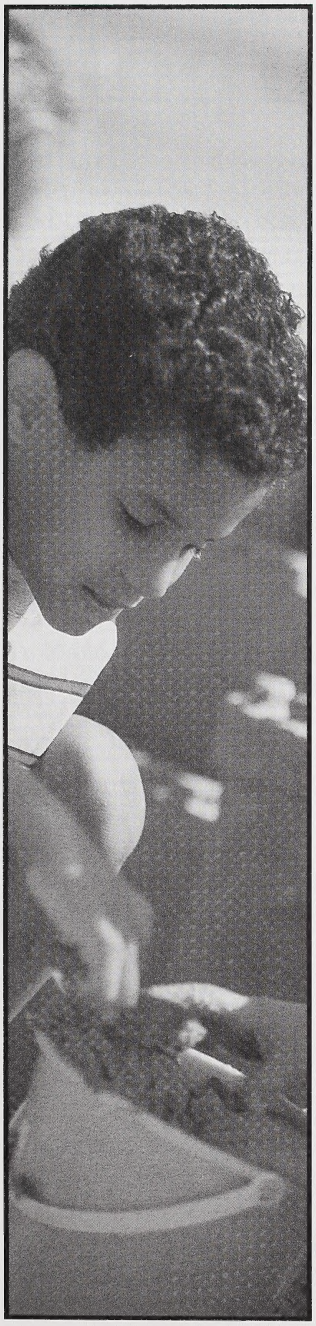
Icons: Activities

Read this information to yourself.

Read this information with the student.

Proceed with the daily Calendar Time activity.

Contents



Mathematics Module 9 Overview

Welcome to the last module of Grade One Mathematics.

During the first few days, the student will continue to learn about shape, size, congruence, and similarity in both two-dimensional and three-dimensional space. A wide variety of familiar objects and other concrete materials will be used to introduce appropriate vocabulary and build understanding.

The student will identify quantities, see relationships between numbers, and solve addition and subtraction problems.

Problem solving continues to be an important focus of this mathematics program. This approach encourages investigating, exploring, creating, and sharing. It also helps children gain confidence in their ability to use mathematics in a meaningful way.

To learn about place value, the student will estimate, count greater quantities of objects, and look for number patterns.

The study of statistics will give the student the opportunity to predict, collect, sort, represent, interpret, and make decisions.

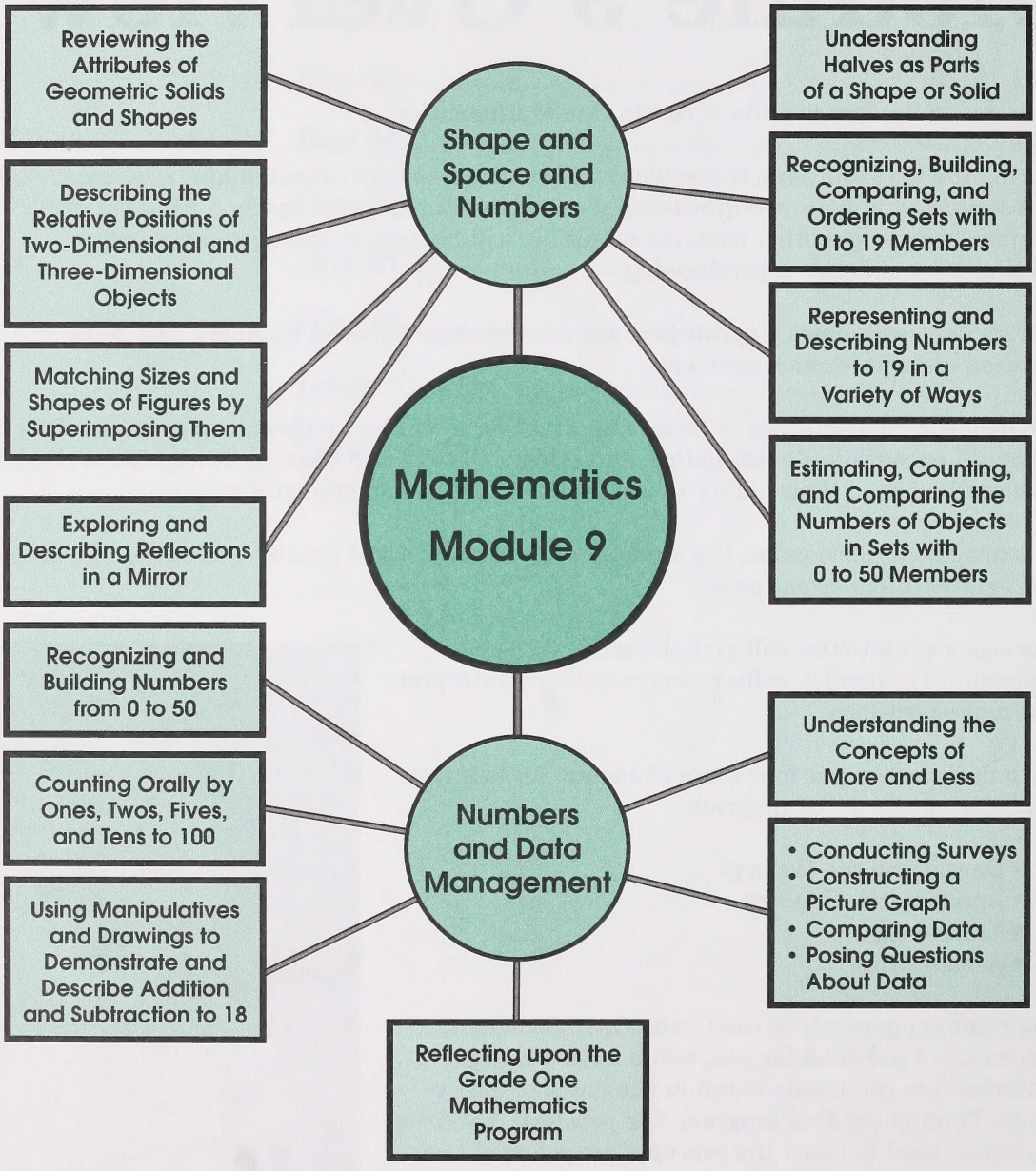
Each day's lesson has four main elements. All four are important parts of the program.

- Developing the Concept
- Applying the Concept
- Enrichment
- Assignments

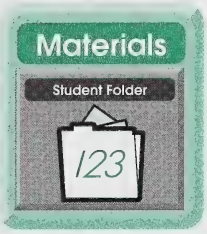
The basic components of the Grade One Mathematics program are provided for you, while other practical materials are commonly found in the home or easily made. Throughout this program, the practical, hands-on materials used to teach the concepts are referred to as *manipulatives*.

Module Web Chart

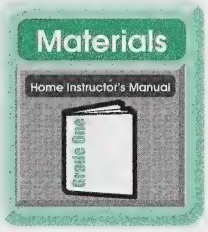
This chart highlights the main mathematical topics for this module.



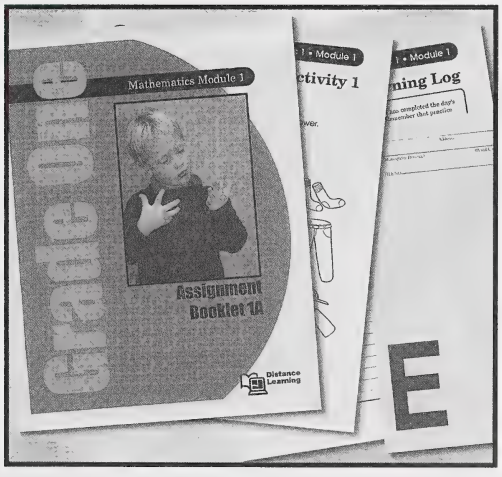
Mathematics Module Submissions



Place completed items in the Student Folder when you see this icon. On Day 9 and Day 18 of each module, you will find a checklist in the Assignment Booklet to help you compile items for submission to the child's teacher. The teacher will let you know when to provide these items for marking.



Note: The Student Folder is not included with the basic course components. Refer to the Home Instructor's Manual for information on the Student Folder.



Calendar Time

Many essential concepts are learned through the calendar activities that begin each lesson. If your student is not enrolled in the accompanying Grade One Thematic program, refer to the Calendar Package for information, activities, and resources.

Additional Resources

The basic mathematics resources for this module are provided. You could extend these with additional resources from a public or school library. Listed below are concept-related books that could enrich this module. You could also investigate commercial games and computer programs to enhance your student's learning opportunities.

Shape and Space Concept Resources

Geometry: Shapes

Atwood, Ann. *The Little Circle*. 1967.
Chevalier, Christa. *Spence Makes Circles*. 1982.
Craig, M. Jean. *Boxes*. 1964.
Epstein, Sam and Beryl. *Who Needs Holes?* 1970.
Fisher, Leonard Everett. *Look Around: A Book About Shapes*. 1987.
Hoban, Tana. *Circles, Triangles, and Squares*. 1974.
Hoban, Tana. *Shapes, Shapes, Shapes*. 1986.
Hutchins, Pat. *Changes, Changes*. 1971.
Pienkowski, Jan. *Shapes*. 1998.
Reiss, John. *Shapes*. 1974.
Seuss, Dr. *The Shape of Me and Other Stuff*. 1973.
Van Leeuwen, Jean. *Too Hot for Ice Cream*. 1974.
Wynne-Jones, Tim. *Architect of the Moon*. 1988.

Geometry: Symmetry

Cutts, David. *Look... A Butterfly*. 1982.
Gardner, Beau. *The Look Again...and Again, and Again, and Again Book*. 1984.
Jonas, Ann. *Reflections*. 1987.
Kauffman, Elizabeth. *Butterflies*. 1986.
Kent, Jack. *Jim, Jimmy, James*. 1984.
Sitomer, Mindel and Harry Sitomer. *What is Symmetry?* 1970.
Walter, Marion. *Look at Annette*. 1972.

Number Concept Resources

Counting by Twos, Threes, and Fives

Demi. *Demi's Count the Animals 1,2,3*. 1986.
Hughes, Shirley. *Two Shoes, New Shoes*. 1986.
Selfridge, Oliver G. *Fingers Come in Fives*. 1966.
Young, Betty. *Two by Two*. 1985.

Addition

Anno, Mitsumasa. *Anno's Counting Book*. 1977.
Browne, Eileen. *Funny Animals Numbers*. 1986.
Burningham, John. *Pigs Plus*. 1983.
Carle, Eric. *The Rooster Who Set Out to See the World*. 1972.
De Brunhoff, Laurent. *Babar's Counting Book*. 1986.
Galdone, Paul. *Henny Penny*. 1968.
Hawkins, Colin. *Adding Animals*. 1983.
Lapp, Eleanor. *Duane, The Collector*. 1976.
Melville, Heather. *Four Pigs and a Bee*. 1974.
Tolstoi, Alexei. *The Great Big Enormous Turnip*. 1968.

Numbers to 99

Blumenthal, Nancy. *Count-a-Saurus*. 1989.
De Regniers, Beatrice S. *So Many Cats!* 1988.
Feelings, Muriel. *Moja Means One*. 1971.
Fisher, Leonard Everett. *Number Art: Thirteen 123s from Around the World*. 1982.
Le Sieg, Theodore. *Wacky Wednesday*. 1974.
MacDonald, Suse, and Bill Oakes. *Numblers*. 1988.
McMillan, Bruce. *Counting Wildflowers*. 1986.
Ockenga, Starr and Eileen Doolittle. *World of Wonders: A Trip Through Numbers*. 1988.
Showers, Paul. *How Many Teeth?* 1991.

Subtraction

Adams, Pam. *There Were Ten in the Bed*. 1979.
Burningham, John. *Mr. Gumpy's Outing*. 1984.
Burningham, John. *Ride Off: Learning Subtraction*. 1983.
Christelow, Eileen. *Five Little Monkeys Jumping on the Bed*. 1989.
Hawkins, Colin. *Take Away Monsters*. 1984.
Hooper, Meredith. *Seven Eggs*. 1985.
Mathews, Louise. *The Great Take-Away*. 1980.

Fractions

Dennis, J. Richard. *Fractions Are Parts of Things*. 1971.
Greenaway, Kate. *A-Apple Pie*. 1979.
Mathews, Louise. *Gator Pie*. 1979.
Pomerantz, Charlotte. *Half-Birthday Party*. 1984.

Data Management Resources

Data Analysis: Estimation

Dubanevich, Arlene. *Pigs in Hiding*. 1983.
Lobel, Arnold. *"The Journey" from Mouse Tales*. 1985.
Lottridge, Celia B. *One Watermelon Seed*. 1986.

Data Analysis: Graphing

Anno, Mitsumasa. *Anno's Counting Book*. 1977.
Bogart, Jo Ellen. *Ten for Dinner*. 1989.

Calculators

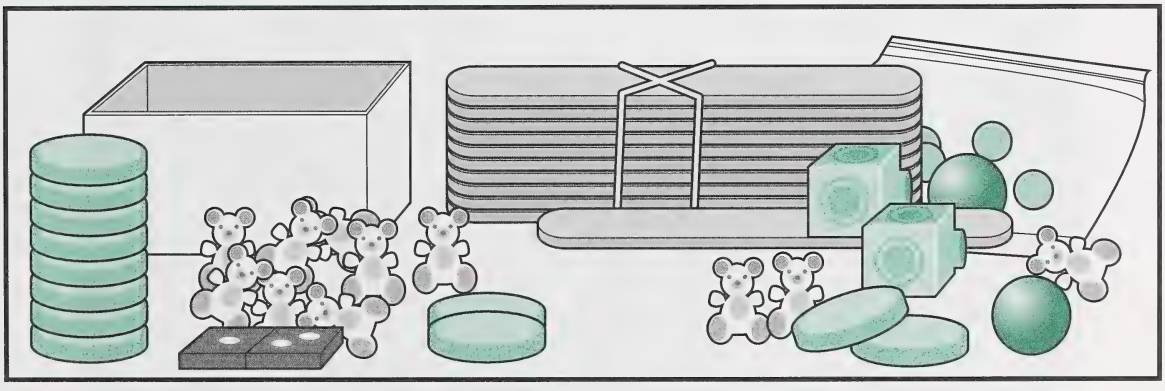
Adler, David A. *Calculator Fun*. 1981.
Bitter, Gary G. and Thomas H. Metos. *Exploring with Pocket Calculators*. 1977.
Catherall, Ed. *Investigating Calculators*. 1984.
Darke, Marjorie. *Imp*. 1985.
Lewis, John. *The Usborne Pocket Calculator Book*. 1982.

Cleaver, Elizabeth. *ABC*. 1984.
Hoban, Tana. *Is It Rough? Is It Smooth? Is It Shiny?* 1984.

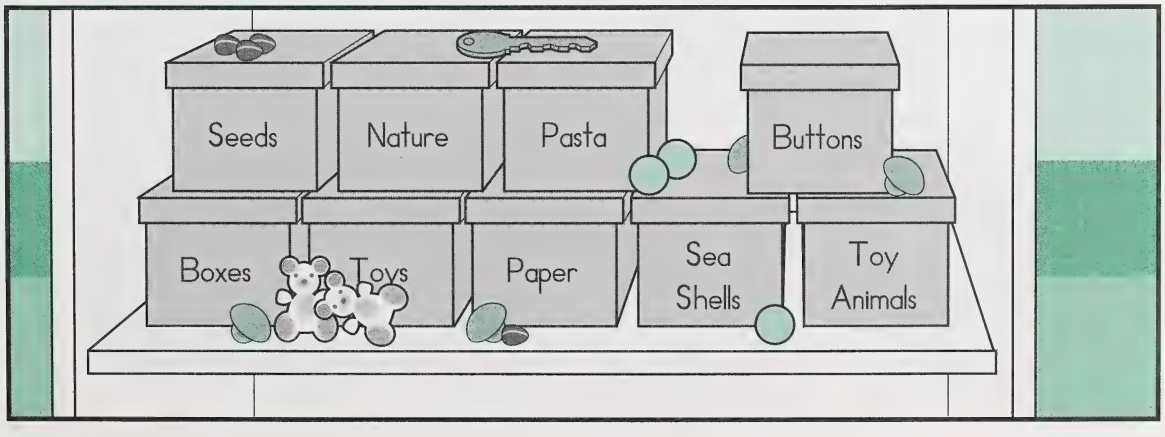
Data Analysis: Prediction

Burningham, John. *Would You Rather....* 1978.
Gackenbach, Dick. *Supposes*. 1989.
Ginsburg, Mirra. *Mushroom in the Rain*. 1997.

Solids and Shapes Manipulatives



Number Concept Manipulatives



Home Schooling:
Teaching the Whole Child
Social
Physical
Intellectual
Creative
Emotional

Day 1

Calendar Time

Time recommended: 10 minutes

If your student is enrolled in the accompanying Grade One Thematic program, you will already have completed Day 1, Calendar Time before turning to this Mathematics Module 9 booklet. In that case, proceed directly with the remainder of Math Time.

If your student is not enrolled in the accompanying Thematic program, then refer to the Calendar Package for further information before proceeding with today's lesson.

Focus for Today

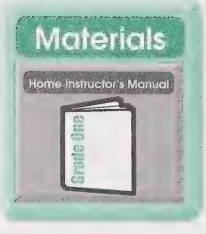
Time recommended: 45 minutes

- reviewing the attributes of geometric solids and shapes
- describing the relative positions of three-dimensional objects, using words such as *near, far*, *left*, and *right*
- describing the relative positions of two-dimensional shapes, using words such as *near*, *far*, *left*, and *right*

Vocabulary (spoken only)

geometric solids	rectangular	triangle
geometric shapes	triangular	box
near/close/far	faces	can
left/right	copy	above/below
cone	cube	over/under
flat surface	rectangular prism	top/bottom
curved surface	cylinder	beside/between
edges	sphere	horizontal line
corners	pyramid	vertical line
circular	circle	in front of/behind
square	rectangle	up/down

Materials Required



- box containing materials from the master list
- collections of geometric solids and shapes, previously used in Module 5

  If you haven't already done so, you could purchase a set of Geometric Solids from the Learning Rescources Centre (formerly the Learning Resources Distributing Centre). Look in the Home Instructor's Manual under Manipulatives for ordering information.

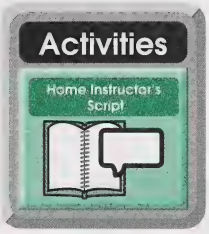
- modelling clay

Developing the Concept

In Module 5, the student described the relative positions of **geometric solids** and **geometric shapes**, using terms such as **near**, **far**, **left**, and **right**. Today, the student will review these concepts, using modelling clay and collections of geometric solids and shapes.

If you have purchased a set of Geometric Solids from the Learning Resources Centre, add these items to your collection.

Place a **cone** in front of the student, and use the following script.

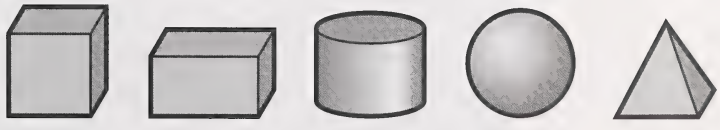


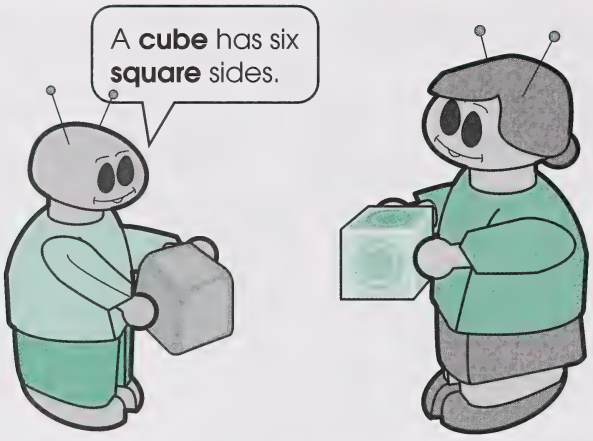
Look at this **solid**.

Describe it. (Guide the student to use terms such as **flat surface**, **curved surface**, **edges**, **corners**, **circular**, **square**, **rectangular**, and **triangular faces**.)

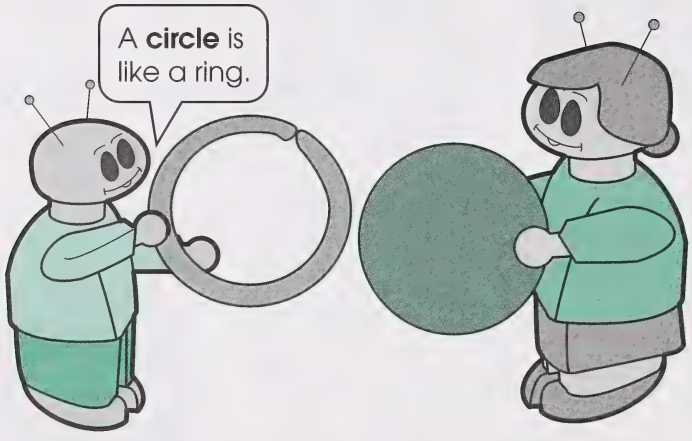
Use modelling clay to build a **copy** of this solid.

Set out different solids until the student has been challenged to also make a **cube**, a **rectangular prism**, a **cylinder**, a **sphere**, and a **pyramid**. Help as necessary.





Repeat a similar procedure with a **circle**, a square, a **rectangle**, and a **triangle**.



Far and near

Applying the Concept

Use your collections of geometric solids and shapes with the following directions. Depending upon the child's level of development, you could substitute terms such as **box** for rectangular prism or **can** for **cylinder**.

Place a **cube** to the **right** of a **cone**.

Place a **rectangle near** a **circle**.

Put a **sphere far** from a **cylinder**.

Place a **rectangular prism above** your head.

Use a variety of positional words to take turns providing directions until the student has identified solids and shapes in a variety of positions, or until the child shows signs of fatigue.

Following are some positional words that you could use.

up	top	below	far
down	bottom	above	left
over	beside	near	right
under	between	close	

Enrichment (optional)

1. I Spy

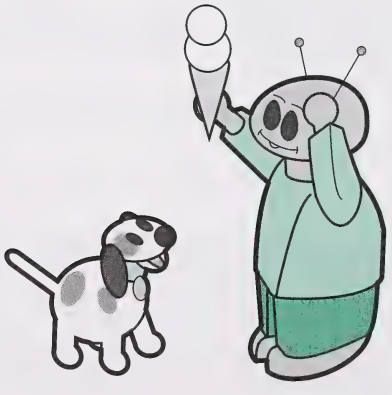
Place pieces from your collections of geometric solids and shapes around your work area. Secretly choose one solid or shape and say the following.

> I spy with my little eye something that is shaped like a **cone**.
>
> It is **near** you.

If the student is not able to identify the solid with the first two clues, help by giving other clues. For example, you could add, "This solid is to the left of the table and has a circular bottom."

Guide the student to focus on the shapes that make up the solid you are describing.

Take turns until the student has practised identifying various solids, shapes, and positions.

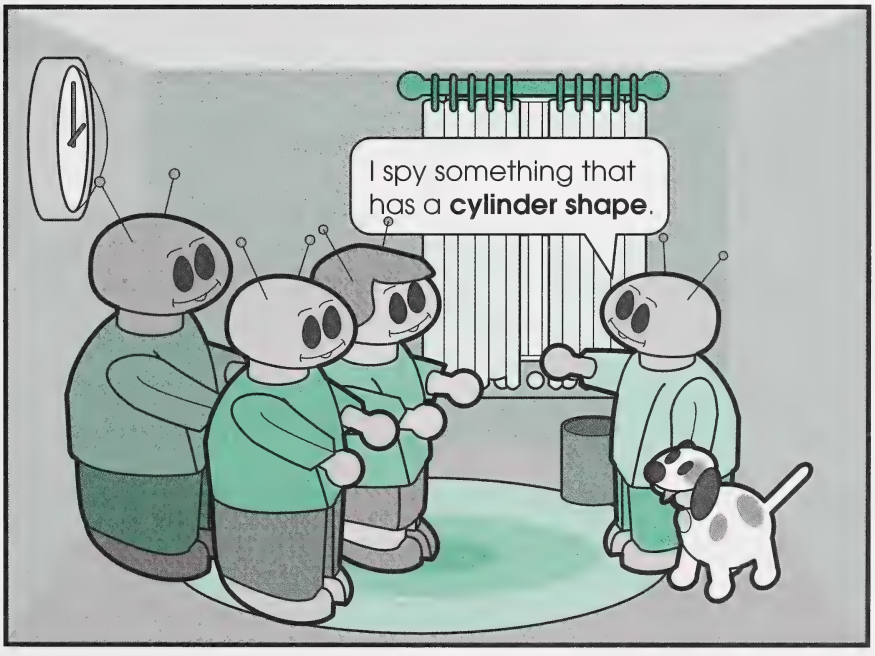


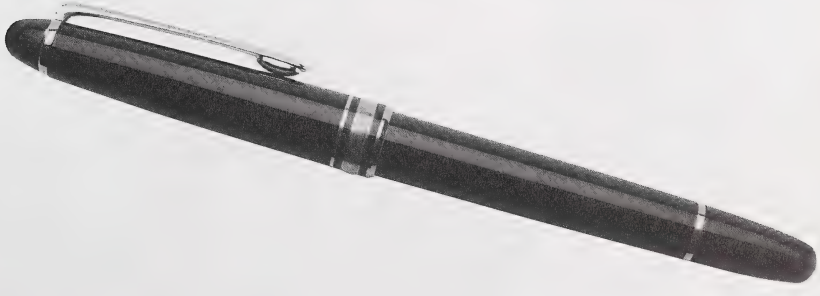
2. Spy at the Table

While eating a meal, take turns giving clues to one another. For example, "I spy someone to your right," or "I spy a circular object in front of you."

Encourage the use of as many positional words as possible, for example, under, over, beside, and between.

You can also play this game while driving in the car, waiting for a movie to begin, or waiting at a bus stop.





One head **above**, one head **below**

3. Scavenger Hunt

Hide ten different items around your work area. Give the student written clues similar to the ones shown below, to help find the items. Limit your hunt area to one room, and help the student as necessary.

It has six square sides.

It is above the coffee table.

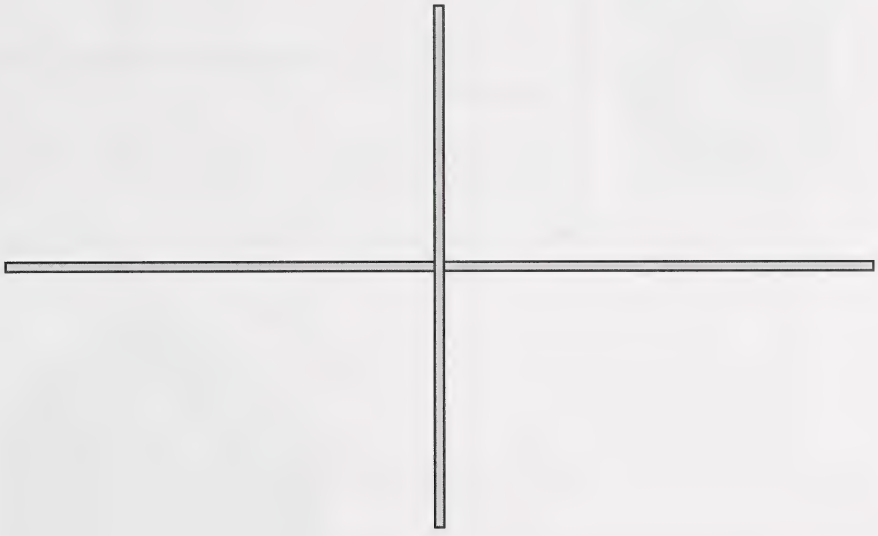
It is behind the chesterfield.

It has a circular-shaped top and bottom.

4. Making Shapes

Make shapes, letters, and number cards from various colours of construction paper.

Use masking tape to make **horizontal** and **vertical lines**, and then give directions similar to the ones that follow.



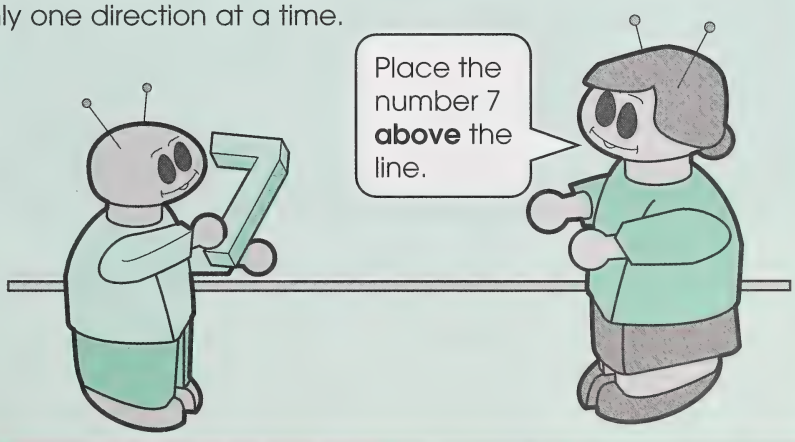
Place a red star **above** the **horizontal line** and to the **left** of the **vertical line**.

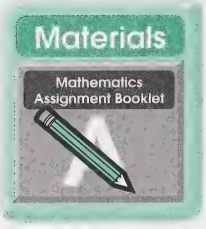
Put the **cone below** the **horizontal line** and to the **right** of the **vertical line**.

Activities

Teaching Tip

If the student experiences difficulty receiving two directions at once, remove either the horizontal or vertical line, and give only one direction at a time.





Turn to Mathematics Assignment Booklet 9A, and follow the directions to do Day 1: Assignment 1.

Next, follow the directions to do all four pages of Day 1: Assignment 2.

Then complete Day 1: Learning Log. Under Student's Thoughts, help your student complete the questions.

Day 2

Calendar Time

Time recommended: 10 minutes

If your student is not registered in the accompanying Thematic program, refer to the Calendar Package for further information.

Focus for Today

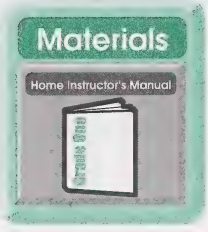
Time recommended: 45 minutes

- reviewing the attributes of geometric solids and shapes
- matching sizes and shapes of figures by superimposing them

Vocabulary (spoken only)

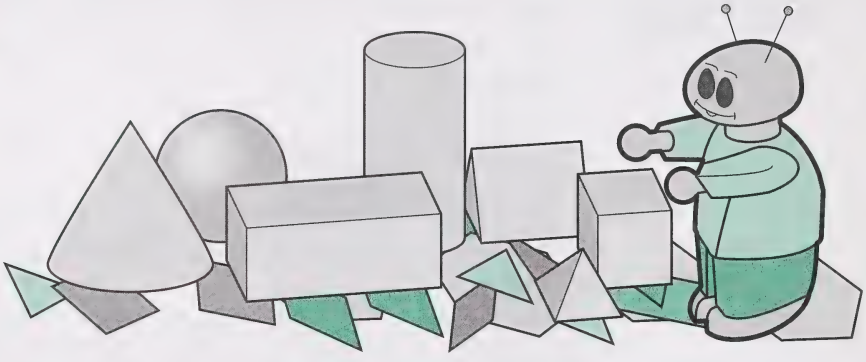
geometric solids and shapes	match	design
faces	strategy	mosaic
matching sizes	figure	chart
shapes/shape	checked	

Materials Required



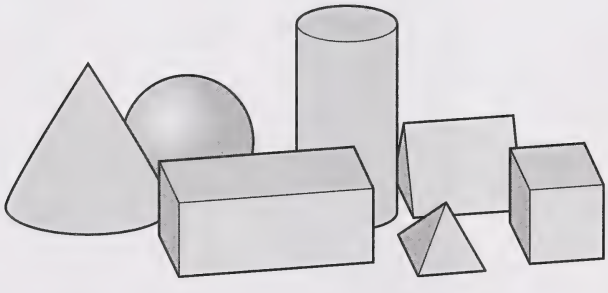
- box containing materials from the master list
- your collection of geometric solids and shapes
- Pattern Blocks

Upon registration, these blocks are a required purchase from the Learning Resources Centre. See the Home Instructor's Manual under Manipulatives for ordering information.



Developing the Concept

Gather your collection of **geometric solids** and **shapes**. Add boxes and other containers with **faces** of **matching sizes** and **shapes**.



Ask the student to help you spread out the solids on a table or the floor. Use the following script.

Find two boxes with **faces** that **match** in size and **shape**. Help the child as necessary.

Tell me how you know they match. (If the student doesn't suggest laying one **figure** on top of the other, then demonstrate this strategy.)

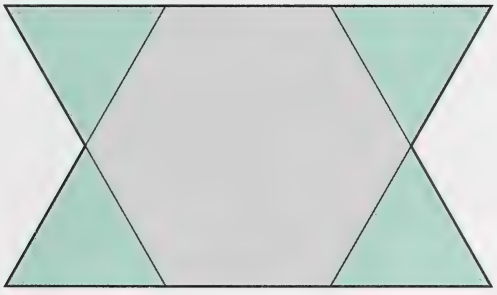
Find two cans of **matching size** and **shape**.

Show me how you **checked** that they **match**. (If the student does not suggest placing one can on top of the other, guide the child to do so.)

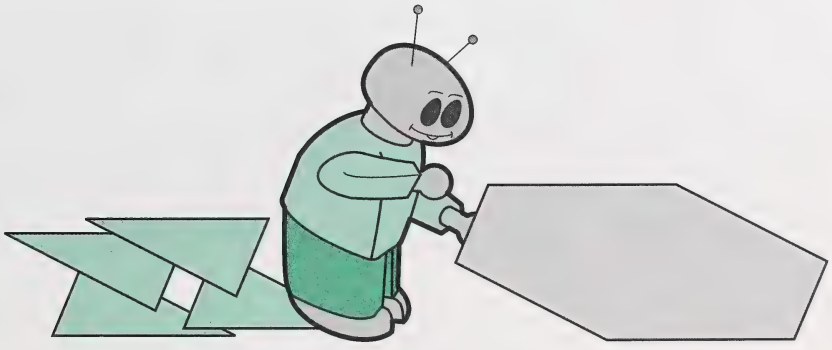
Have the student look for solids with same-sized and same-shaped faces until the child has practised a variety of matches.

Applying the Concept

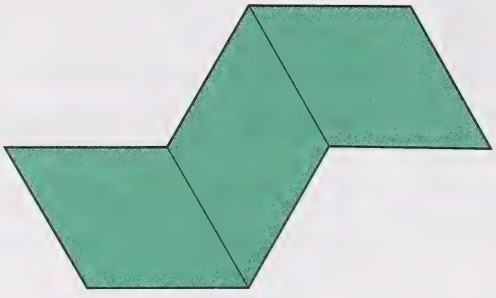
Use Pattern Blocks to make a **design** similar to the following.



Ask the student to lay different Pattern Blocks on top of your design to copy the size and shape of your design.



Take turns using the Pattern Blocks to create designs and copy them by placing different blocks on top of the original ones in each design.

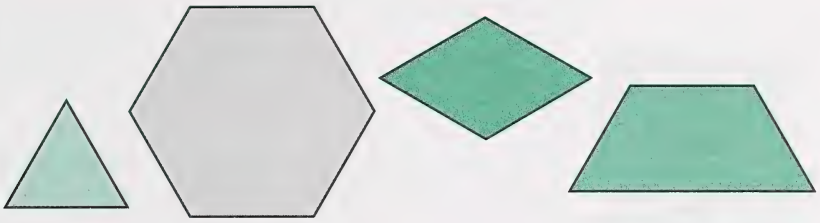


Enrichment (optional)

1. Looking for the Same Sizes and Shapes

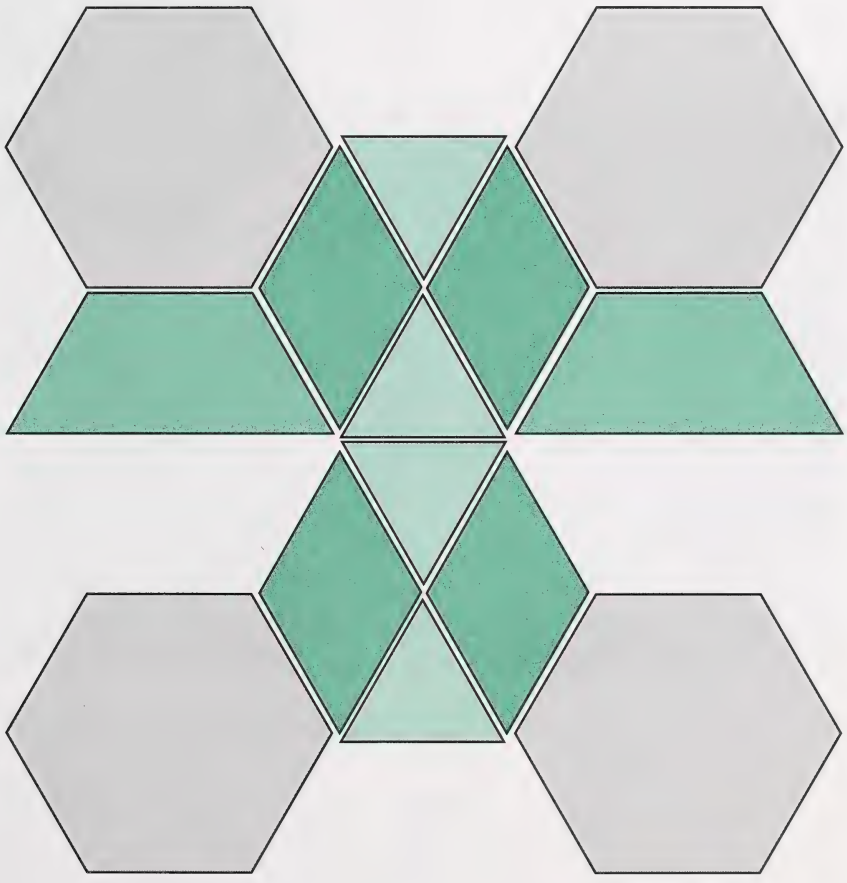
Help the student explore your work area and the neighbourhood for objects that are the same size and shape.

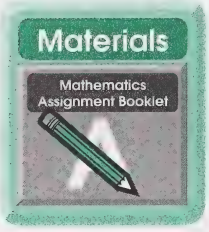
Discuss ways to check that the objects actually do match.



2. Making Mosaics

A **mosaic** is a picture or design made by fitting together various shapes. Encourage the student to use Pattern Blocks to make mosaics. You could also have your student show other people how to make mosaics with Pattern Blocks.





Turn to Mathematics Assignment Booklet 9A, and follow the directions to do the assignment for Day 2.

Then complete Day 2: Learning Log. Under Student's Thoughts, help the child print a sentence or two telling about this day's mathematical learning. For example, was it easy or hard to match sizes and shapes of figures?

Day 3

Calendar Time

Time recommended: 10 minutes

Begin with Calendar Time activities as usual.

Focus for Today

Time recommended: 45 minutes

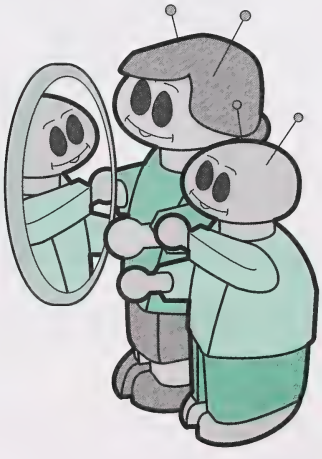
- exploring and describing reflections in a mirror

Vocabulary (spoken only)

reflections
mirror
alike
different
predict
dotted line
prediction
mirror printing

Materials Required

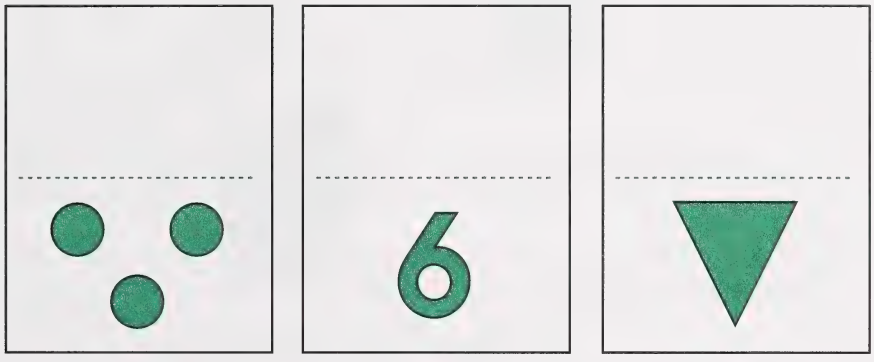
- box containing materials from the master list
- large mirror that can be moved to different positions
- small mirror that has a straight edge
- Pattern Blocks
- large book or piece of cardboard (optional)



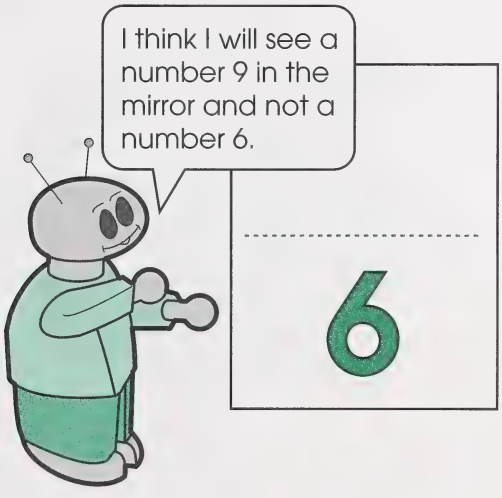
Developing the Concept

Spend some time looking at your **reflections** in a large **mirror**. Discuss how they are **alike** and **different**. If possible, experiment by putting the mirror in different positions and angles to see if the images change.

Ask the student to help you make the following illustrations on blank loose-leaf paper.



Have the student **predict** what would show in a small mirror that is placed on the **dotted line** of each page.

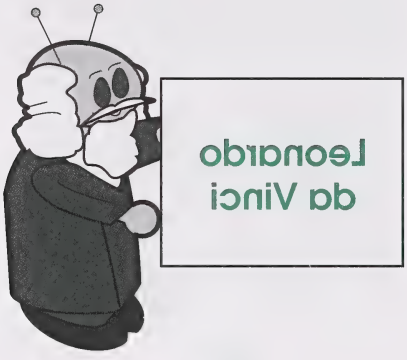


Ask the student to check the **prediction** by placing the mirror on the dotted line. Compare the prediction with the actual reflection.

Applying the Concept

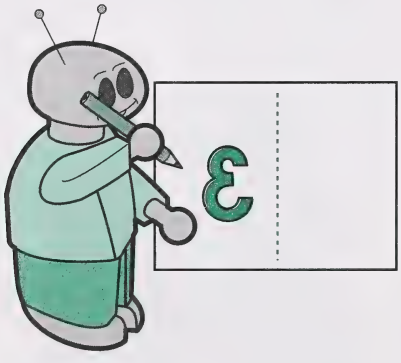
Mirror Printing

A famous Italian inventor and artist named Leonardo da Vinci wanted to keep his thoughts secret, so he wrote them in **mirror printing**. His writing was hard to read.

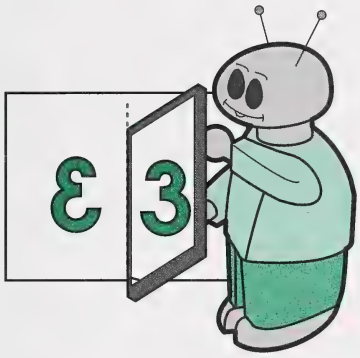


My Mirror Printing Booklet

Ask the student to print three individual numbers in mirror printing and then draw a line to the right of each figure.



Have the student predict what each image will look like and then check by placing a small mirror on each line.

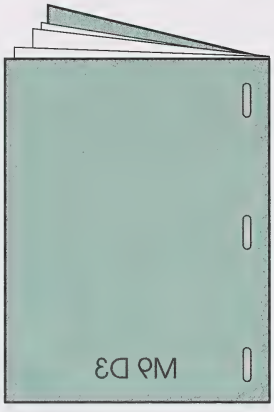


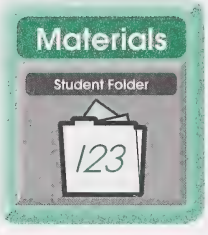
Place the three mirror-printing pages between front and back cover pages. Staple the booklet together on the left side.

Help the student print backwards on the front cover to call the booklet **My Mirror Printing**. Add the word **by** and the student's full name, all printed backwards.

Then have the student check for accuracy by holding the front cover up to a mirror. Help the child make changes, if necessary.

Guide the student to also print M9D3 backwards on the back cover of the booklet as the abbreviated form of Module 9, Day 3.





Place this booklet in the Student Folder.

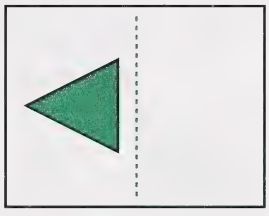
Enrichment (optional)

1. What Will You See?

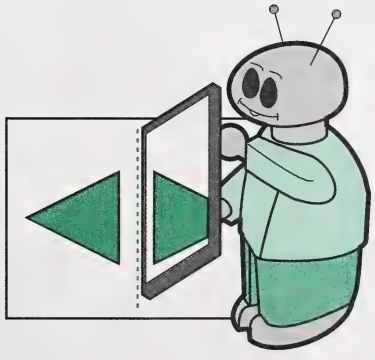
For this activity, the student will need a small mirror, blank index cards, and the Pattern Blocks.

Step 1: Encourage the student to create designs and patterns with Pattern Block shapes, letters, or numbers on one half of each index card.

Draw a line beside each figure, and have the student predict the reflection that you will see when a mirror is placed on the line.

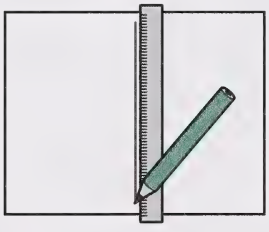


Step 2: Hold a mirror upright alongside each design, and explore the reflection created. Discuss what you see.

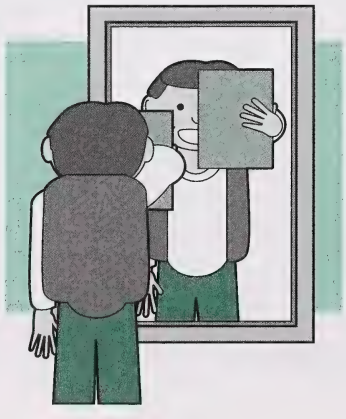


2. Draw a Face

Step 1: Have the student draw a straight line down the centre of a piece of paper. This line is where the mirror will be placed after the face is drawn.

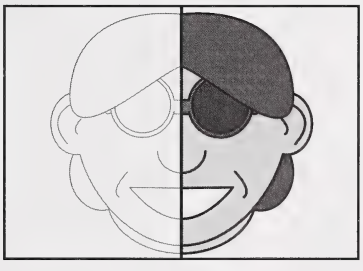


Have your student look in a mirror while holding a large book or piece of cardboard across half of the face. Ask how many eyes and ears the child can see. How much of the mouth can be seen? What about the nose?

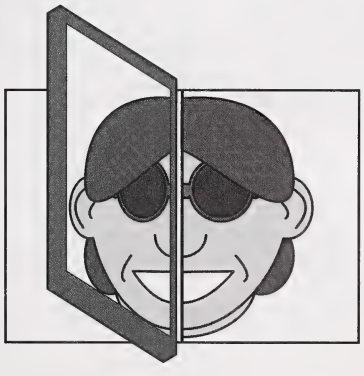


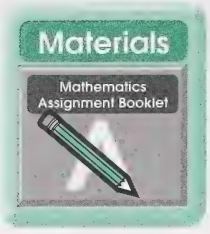
Step 2: Ask the student to draw half of a face on one side of the line on the paper. First fold the paper in half along the line so that the child doesn't accidentally draw on the wrong side.

Step 3: Unfold the paper. Have the student predict what might be seen and then make a quick sketch on the blank side of the line.



Step 4: Instruct the student to place a mirror along the line and discuss how the prediction compares with the actual image.





Turn to Mathematics Assignment Booklet 9A, and follow the directions to do the assignment for Day 3.

Then complete both pages of Day 3: Learning Log. Under Student's Thoughts, help the student complete the self-evaluation and any additional comments about the day's mathematical learning.

Day 4

Calendar Time

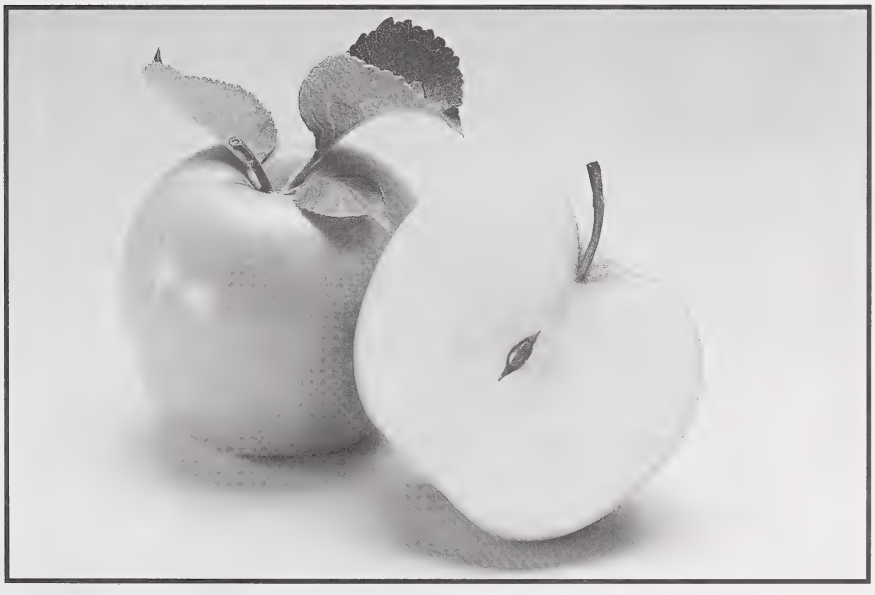
Time recommended: 10 minutes

Begin with Calendar Time activities as usual.

Focus for Today

Time recommended: 45 minutes

- demonstrating that halves are parts of a shape or solid
- explaining orally that halves are parts of a shape or solid



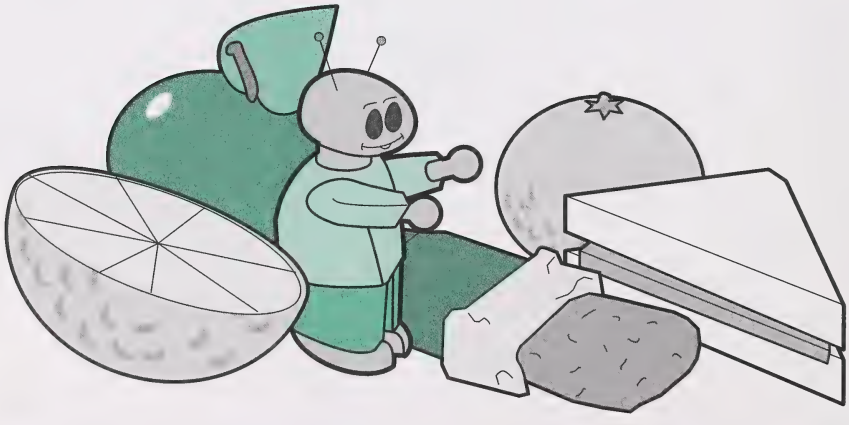
Vocabulary (spoken only)

equally
same amount
half/halves
equal parts
same size
check
strategy
folding/refolding
remaining
equal shares
one-to-one correspondence
same

Materials Required

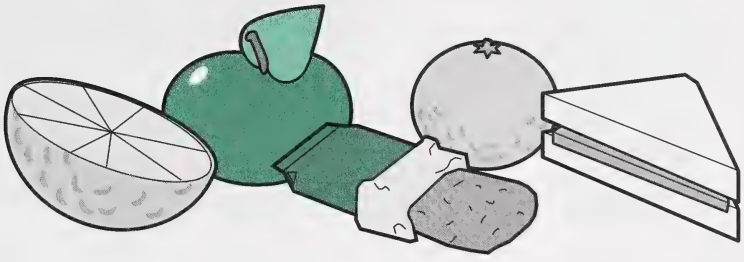
- box containing materials from the master list
- orange, grapefruit, apple, sandwich, granola bar, or other foods that can be cut in half
- knife and cutting board
- Geometric Shapes page from the Appendix of the Home Instructor's Manual
- at least 12 small edible counters, such as carrot sticks, raisins, miniature marshmallows, candies, sunflower seeds, or chocolate chips (optional)

  Note: Be certain the student is not allergic to any food items that you choose.
- a pair of dice (optional)



Developing the Concept

Set out a knife, cutting board, and some food items that can be cut in half, such as those listed in Materials Required.



Note: For safety reasons, supervise your student closely throughout this activity.

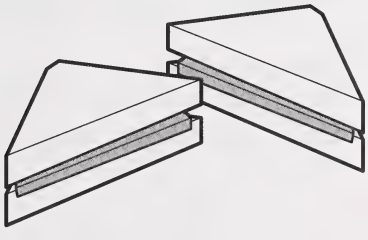
Begin your discussion with the following script.

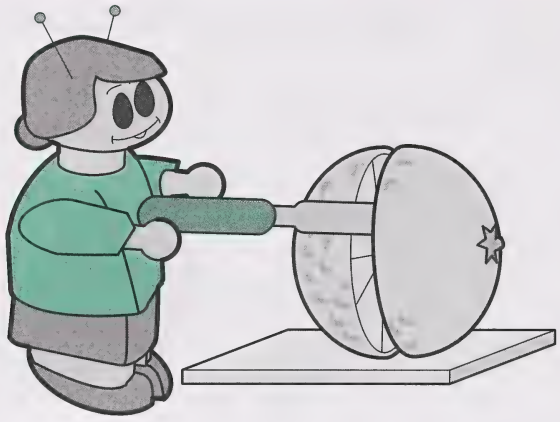
Here is an apple to share **equally** between two people, so that each person gets the **same amount**.

How would you do that? (Cut the apple in **half**.)

How much of the apple would each person get? (one-half)

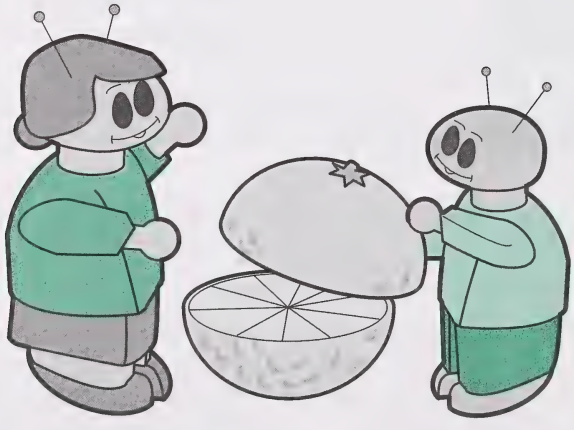
Guide the student to use the term **half** while cutting the apple into two equal pieces. Have the student continue to demonstrate the term half by cutting the remaining food items into two **equal parts**.





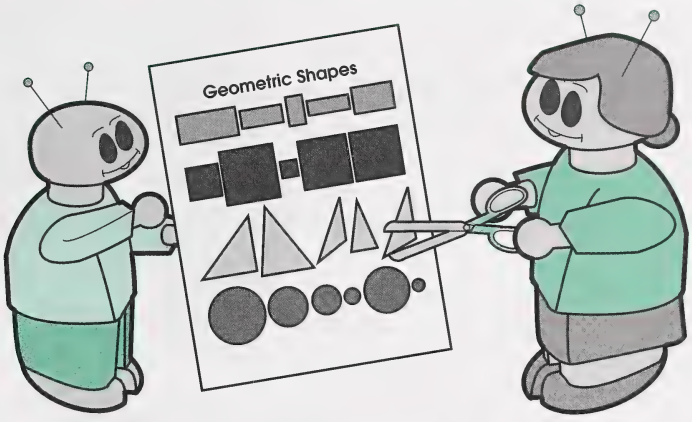
Look at all the food pieces, and discuss that two **halves** are the **same size** or **same amount** as each other.

Ask the student to explain how to **check** that the two halves are the same size. If the student does not suggest putting one of the halves on top of the other, guide the child to use this **strategy** as a check.

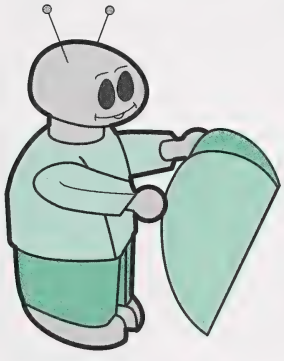


Applying the Concept

Set out the Geometric Shapes page from the Appendix of the Home Instructor's Manual. Tell the student that halves can be made with paper shapes, and then help the student cut out the shapes.

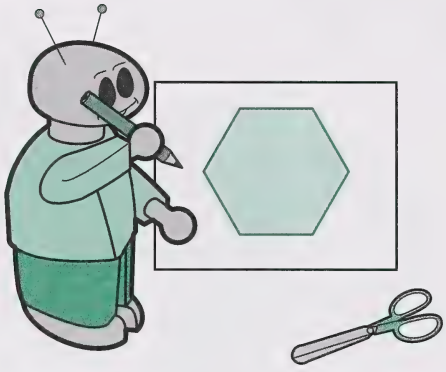


Have the student choose one of the shapes and show how to find one-half of it. If necessary, demonstrate how to find halves by **folding** the shape in half. Ask the student to find one-half of three other shapes from the Geometric Shapes page.



Discuss how the student can check that each shape has been folded in half by **refolding** it to see that both sides are the same. Then have the student unfold all the shapes and colour one-half of each one.

Give your student the opportunity to choose some personal shapes to draw or trace and then check for halves.



Enrichment (optional)

1. "One-Half" Poster

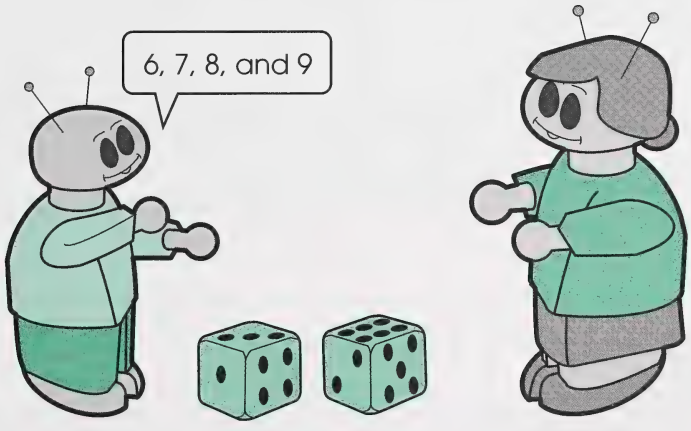
Challenge the student to draw a "One-Half" poster and colour only one-half of each shape in the poster. Use the example that follows as a guide.

2. Share the Goodies

For this activity, gather a set of dice and at least 12 small edible goodies, such as carrot sticks or any of the others listed in Materials Required.

Step 1: Take turns rolling the pair of dice and then adding the numbers that turn up.

When adding the numbers, model counting forward from the larger number, and encourage the student to do the same.

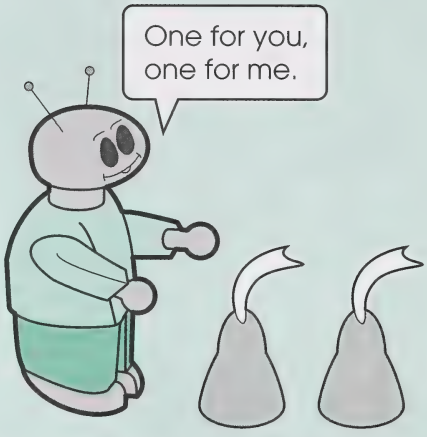


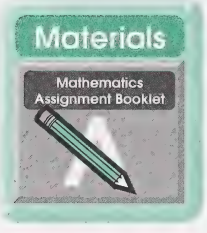
Step 2: The player who did not add the two numbers can then figure out how many goodies each person should get to share the treats equally.

If the sum of items cannot be equally divided into halves, such as with the number nine, guide the student to discover that there will be one item **remaining**. You and the student may choose to divide this remaining item in half or leave one remaining.

Monitor one another's addition and sharing. Occasionally, make a mistake to check the student's understanding.

Observe whether the student is able to make **equal shares**. If the child is having difficulty, suggest distributing the goodies using **one-to-one correspondence.**





Turn to Mathematics Assignment Booklet 9A, and follow the directions to do all three pages of the assignment for Day 4.

Then complete both pages of Day 4: Learning Log. Under Student's Thoughts, help the student complete the self-evaluation and any additional comments about the day's mathematical learning.

Day 5

Calendar Time

Time recommended: 10 minutes

Begin with Calendar Time activities as usual.

Focus for Today

Time recommended: 45 minutes

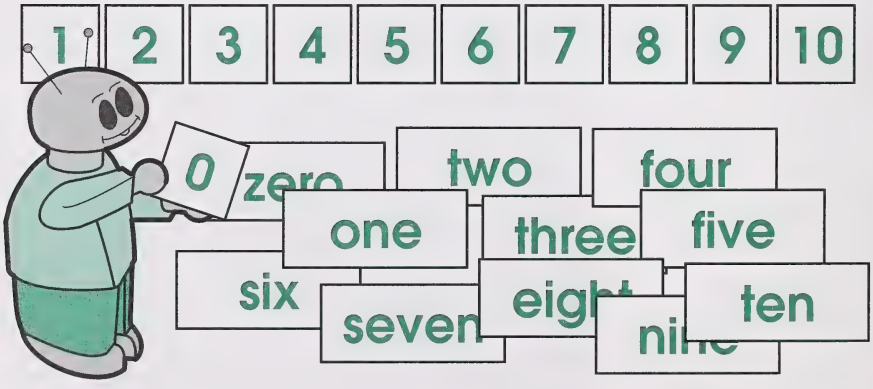
- recognizing, building, comparing, and ordering sets with zero to ten members
- representing and describing numbers to ten in a variety of ways, for example, using different types of counters and using numbers and number words
- recognizing and printing numbers and number words from zero to ten

Vocabulary (spoken only)

zero	four	seven	ten
one	five	eight	more/fewer
two	six	nine	equally
three			

Materials Required

- box containing materials from the master list
- zero to ten number cards, previously used in Module 8, Day 6
- collections of small counters, such as pennies, buttons, or sticks
- zero to ten number-word cards, previously used in Module 3, Day 8
- 11 plain-coloured paper plates
- approximately 55 dried beans or similar small counters
- textured material, such as sandpaper, fabric, or corrugated cardboard (optional)
- rice, sand, tapioca, dried peas, sparkles, or another dry, gritty substance (optional)

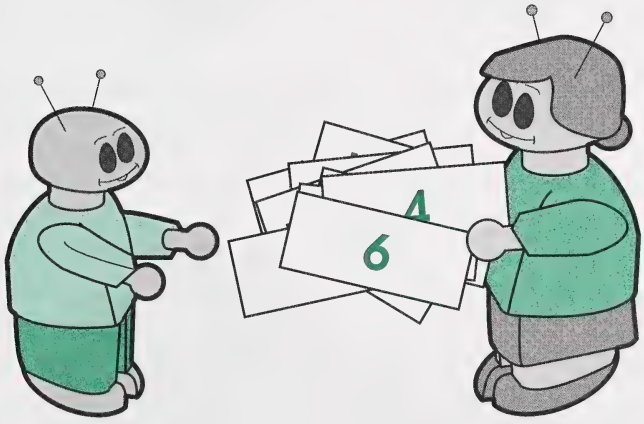


Developing the Concept

In the following activity, you will check the student's knowledge of the numbers and number words from **zero** to **ten**, by having the child count sets of objects within this range.

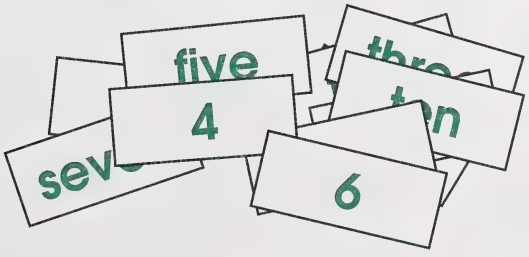
See the Number, Hear the Number

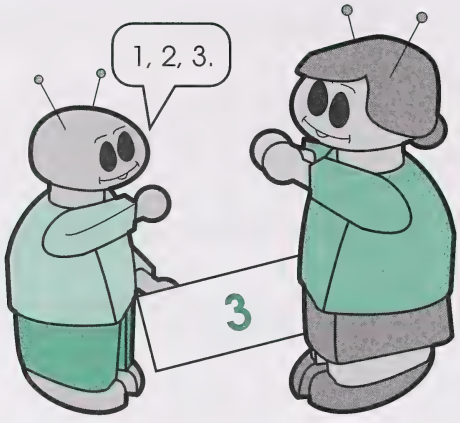
Shuffle the number cards, and then place them face down in front of the student.



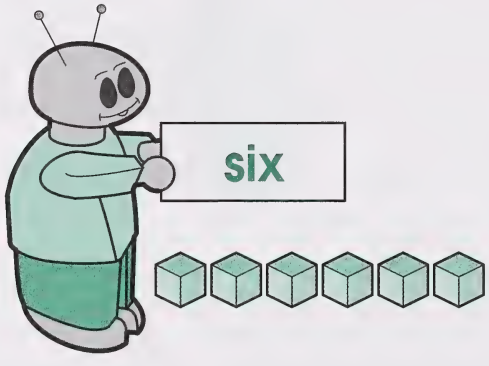
Take turns choosing a card and using small counters to make a matching set. Monitor each other's sets for accuracy. Occasionally, make an error to check your student's understanding of a number.

After each correct number match, take turns clapping the same number of times and having the other person count the claps. Depending upon the student's knowledge of the numbers, you could decide to reshuffle the number cards and repeat this activity.

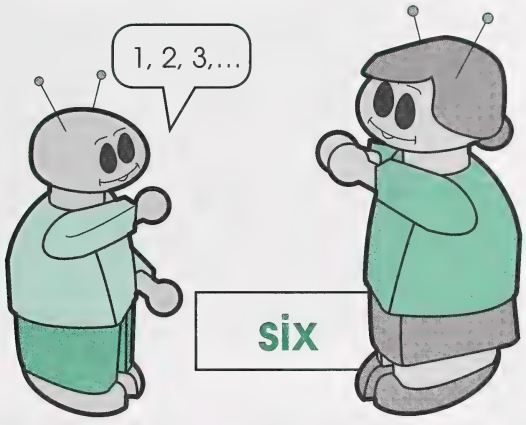




Next, shuffle the number-word cards, and place them face down in front of the student. Take turns making sets of small counters to match chosen number-word cards.



After you show a matching number of counters, again demonstrate the number by clapping your hands. Challenge the other player to listen carefully for the number of claps, in order to verify accuracy.



Continue the game until the student is able to identify the number words zero to ten or until signs of fatigue are evident.

Remember to occasionally make a mistake in order to check your student's ability to match each number-word card to the correct number of objects and claps.

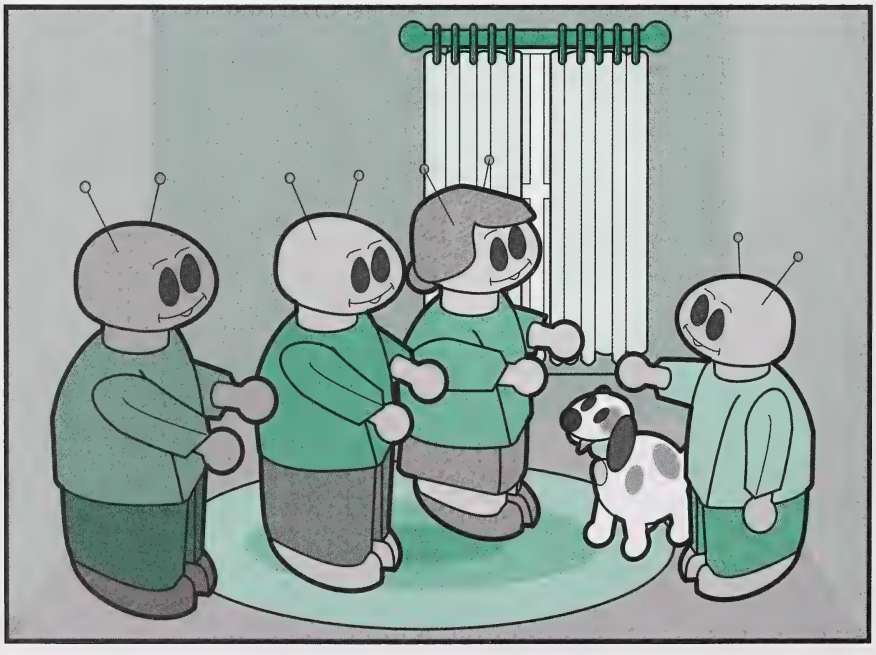
One student, one adult. How many hands do you see? How many knees?

How many noses are there?

Applying the Concept

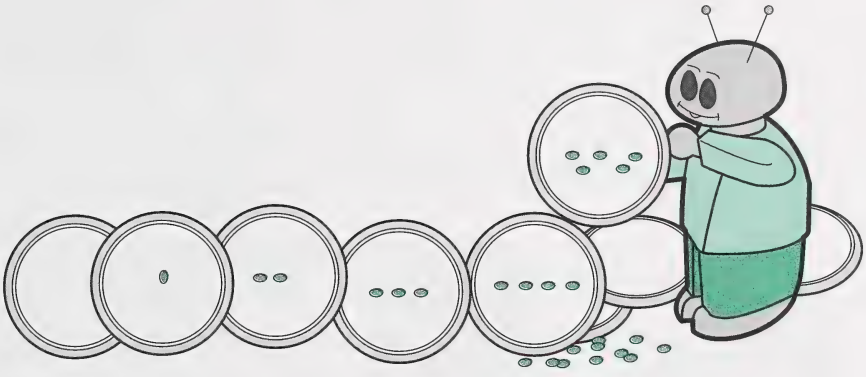
Take turns suggesting a category from things you can see in your work area, for example, books, red blocks, windows, or doors. Have the other person count the number of objects in each category. Keep your chosen categories to those that contain between zero and ten objects each.

Suggest that the student make people sets as well. For example, you might count eight legs, six brown eyes, and four noses.

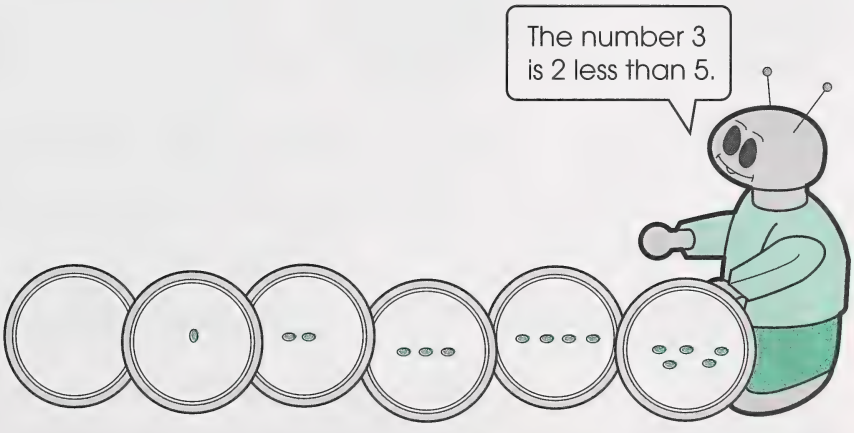


Set out the 11 paper plates and 55 dried beans. Ask the student to make sets from zero to ten by gluing a different number of beans onto each plate.

Then take turns ordering the sets from largest to smallest and vice versa.



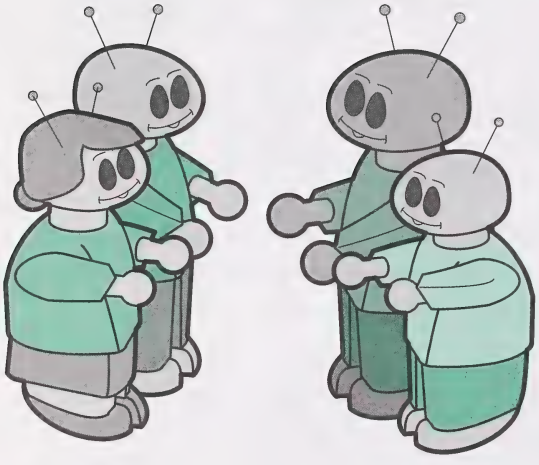
Next, ask the student to show various sets, such as the largest set, the smallest set, the set with five, the sets with fewer than two, and the sets greater than five.



Enrichment (optional)

1. Songs, Rhymes, and Fingerplays

Sing and act out the following number-word poems. For the first one, have all players put their fists together in a circle. Have one person go around tapping each fist to the song, and the person whose fist is tapped on "more" puts that fist behind the back. The last fist to remain is a "hot potato."



One Potato, Two Potato
(Traditional)

One potato, two potato,
three potato, four,
Five potato, six potato,
seven potato, more.

In the next rhyme, imitate each designated motion.

One, Two, Buckle My Shoe
(Nursery Rhyme)

One, two, buckle my shoe.
Three, four, shut the door.
Five, six, pick up sticks.
Seven, eight, lay them straight.
Nine, ten, a big fat hen.

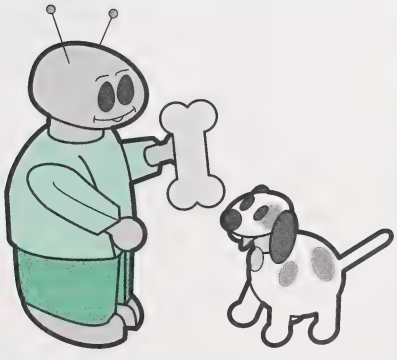
Hold up the correct number of fingers, and then roll your arms over and over for the following rhyme.

This Old Man
(Traditional)

This old man, he played one.
He played knick-knack on my thumb.
With a knick-knack paddy-wack,
Give the dog a bone.
This old man came rolling home.

This old man, he played two.
He played knick-knack on my shoe.
With a knick-knack paddy-wack,
Give the dog a bone.
This old man came rolling home.

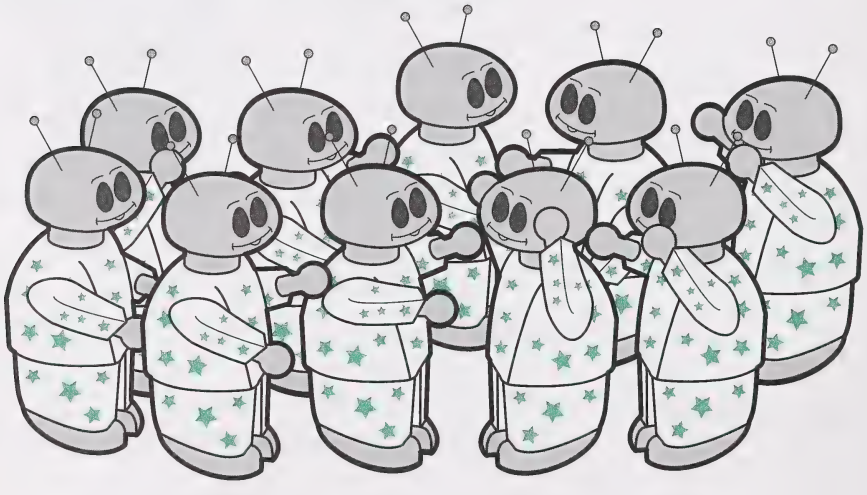
This old man . . . three . . . knee.
This old man . . . four . . . floor.
This old man . . . five . . . hive.
This old man . . . six . . . sticks.
This old man . . . seven . . . up to heaven.
This old man . . . eight . . . gate.
This old man . . . nine . . . spine.
This old man . . . ten . . . once again.



Ten in the Bed
(Traditional)

There were ten in the bed,
And the little one said,
"Roll over, roll over."
So they all rolled over,
And one fell out.
There were nine in the bed,
And the little one said,
"Roll over, roll over."

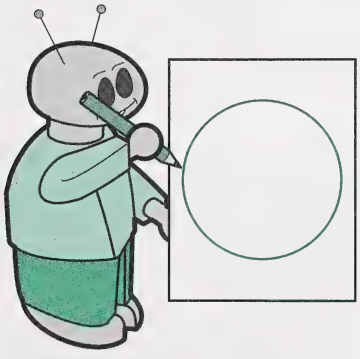
Continue until "There were NONE in the bed, and the little one said, "Good Night!"



2. Number Puzzles

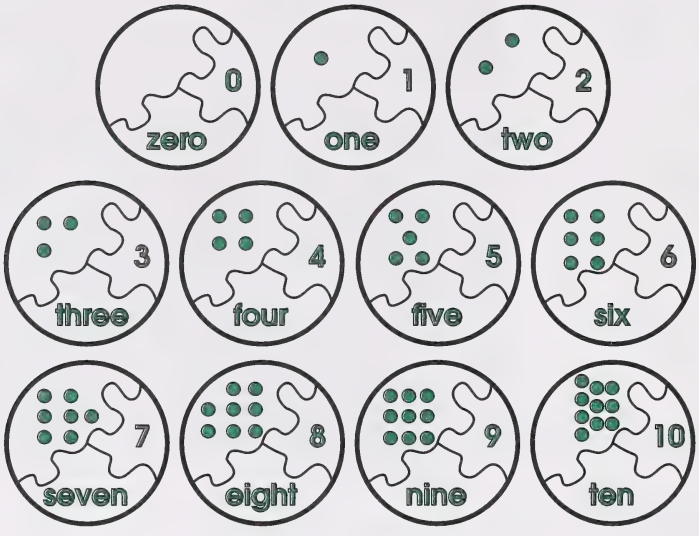
For this activity, you will need felt markers and light cardboard or manila paper.

Step 1: Draw a large geometric shape, such as a circle, on the cardboard or manila paper. Cut out the shape.

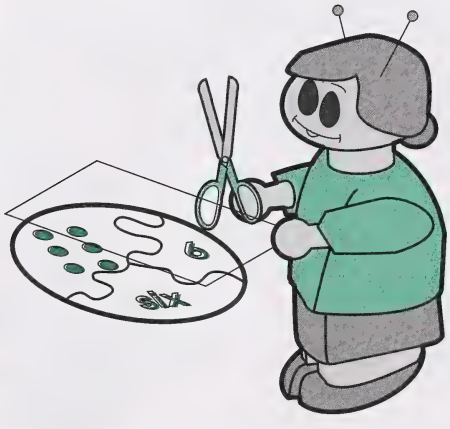


Step 2: Divide the shape into three sections. On one section, print a number; on the second, print the corresponding number word; and on the third, draw a matching number of items.

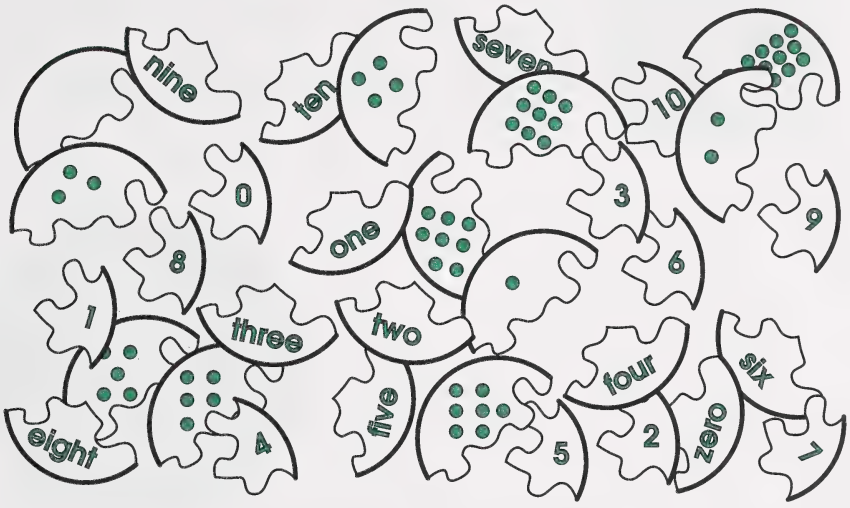
Step 3: Make a puzzle for each number from zero to ten.



Step 4: Cover all of the puzzles with clear adhesive vinyl for protection. Then cut apart each puzzle.



Step 5: Mix up the puzzle pieces and encourage the student to put them back together again.

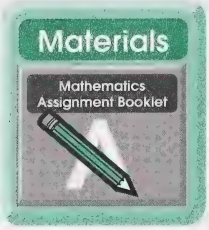


3. Textured Number Cards

Trace or draw number words and numbers on sandpaper, fabric, or other textured material. Glue these words and numbers onto light cardboard to make a set of textured number-word and number cards.

Take turns blindfolding one another and guiding the blinded person's hand over a card to try to identify the number or number word.

Another way that the student could make textured numbers is by printing numbers or number words with white glue on light cardboard. While the glue is still wet, sprinkle on rice, sand, or another dry, gritty substance. Let the glue dry before using the cards.



Turn to Mathematics Assignment Booklet 9A, and follow the directions to do all four pages of the assignment for Day 5.

Day 6

Calendar Time

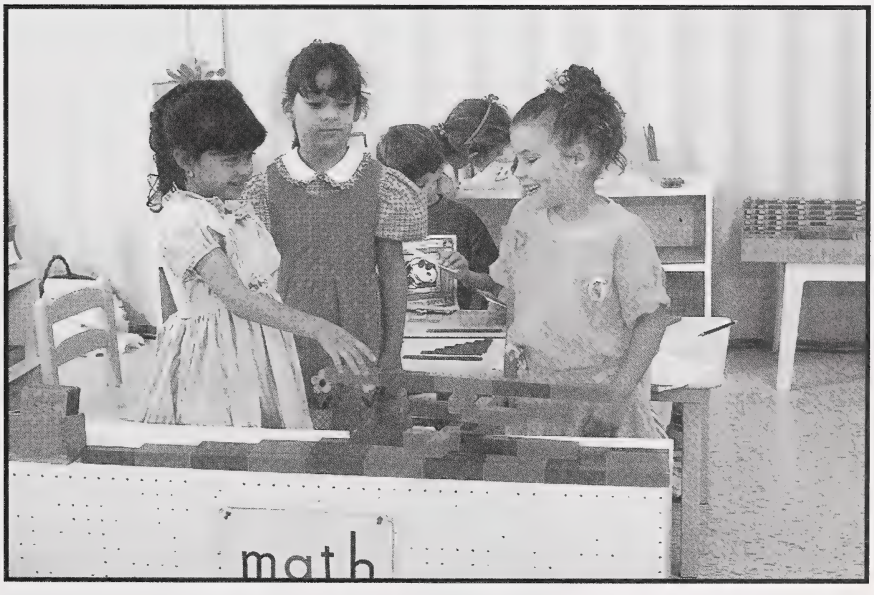
Time recommended: 10 minutes

Begin with Calendar Time activities as usual.

Focus for Today

Time recommended: 45 minutes

- recognizing, building, comparing, and ordering sets with zero to ten members
- representing and describing numbers to ten in a variety of ways

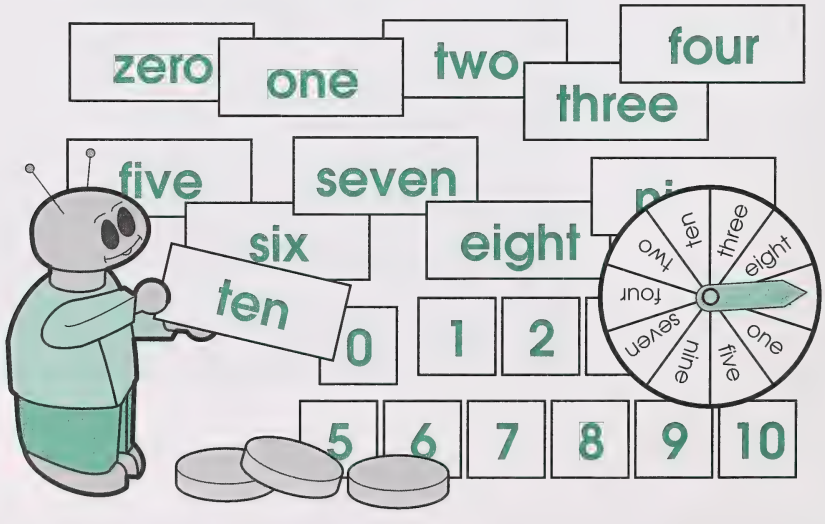


Vocabulary (spoken only)

equal	arrow	greater	least
section/sections	spinner	lesser	most

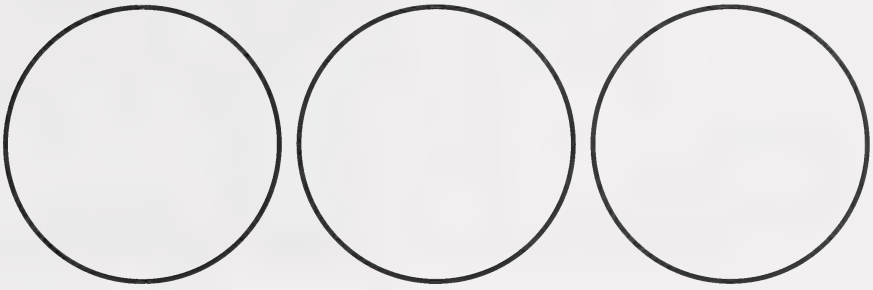
Materials Required

- box containing materials from the master list
- paper rivets
- at least ten small counters
- number and number-word cards from zero to ten
- an extra deck of number cards (optional)
- an extra deck of number-word cards (optional)
- two decks of number-set cards (These can be made as part of an activity today. Look under Enrichment for directions.) (optional)
- greater/lesser spinner (optional)
- most/least spinner (optional)

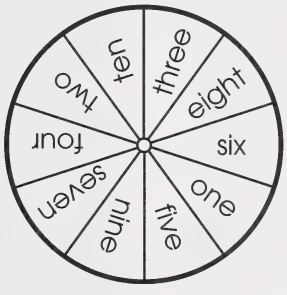


Developing the Concept

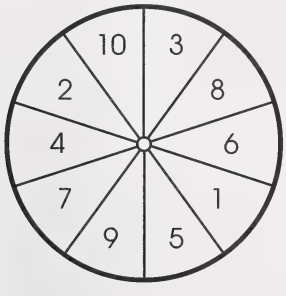
With the student's help, cut three big circles from light cardboard. You could trace around a plate or large bowl to make the shape.



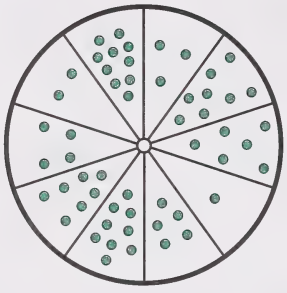
Divide each circle into ten **equal sections**. Print a number word from one to ten in each **section** of the first circle.



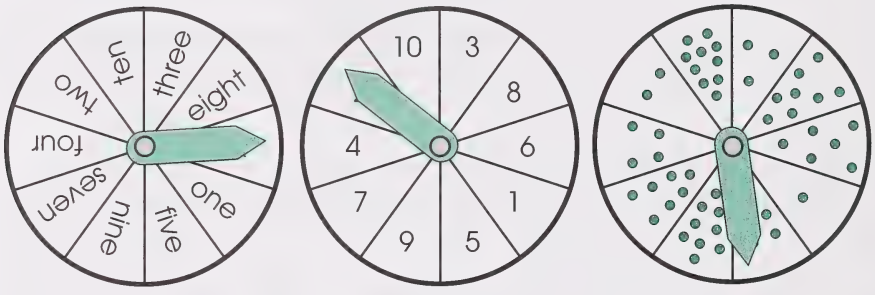
Print a number from one to ten in each section of the second circle.



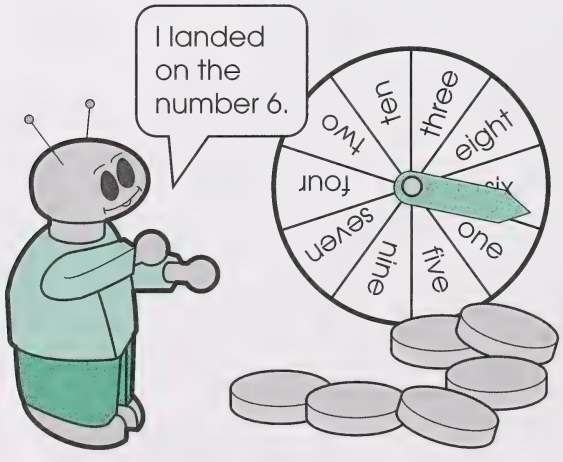
Show a set of objects from one to ten in each section of the third circle.



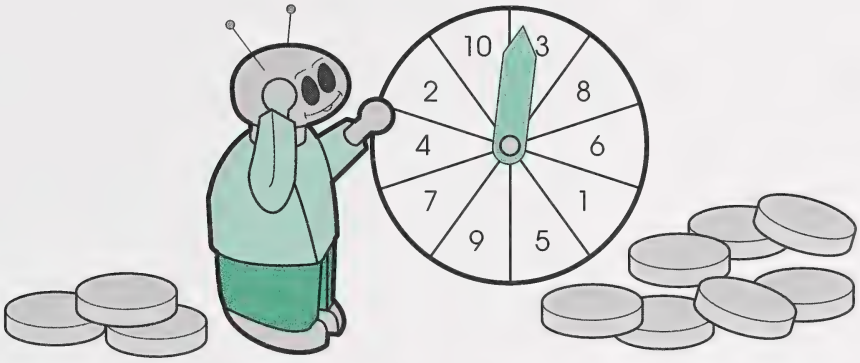
Attach an **arrow spinner** to each circle with a paper rivet.



Take turns spinning one of the spinners, saying the number it lands on, and then making the number with counters.



Continue until the student has practised number concepts to ten on all the spinner cards.



One child on a winter day

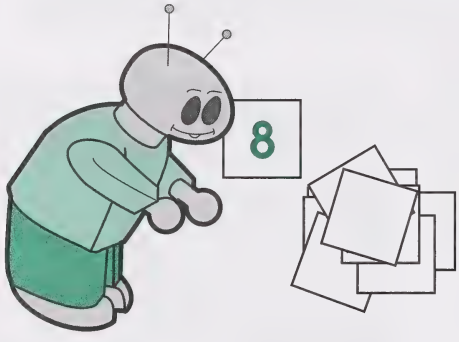
One child on a summer day

Applying the Concept

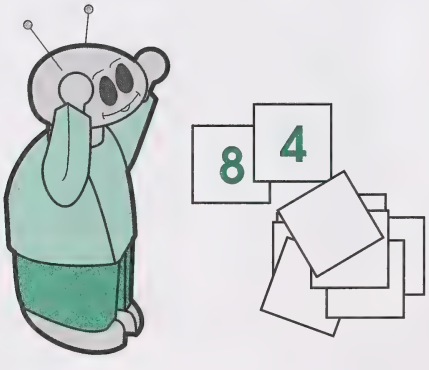
Action Numbers

Shuffle the number and number-word cards, and then place them face down on the table.

Take turns removing the top card and performing a chosen action the number of times shown on the card. For example, a player could jump, touch the toes, or raise the arms eight times if the card for number eight was drawn.



Continue until the student has practised all of the number concepts to ten.



Enrichment (optional)

1. Concentration

For this activity, you will need the following sets of 11 cards each for numbers from zero to ten:

- two decks of number cards
- two decks of number-word cards
- two decks of number-set cards

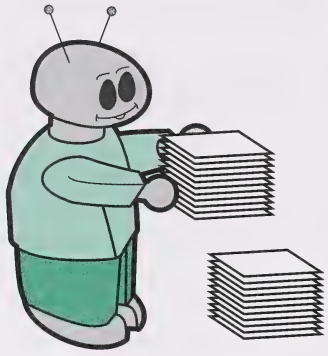
You and your student could make these cards from different colours of light cardboard, such as commercial Bristol board.

Check with the student for preferred card colours .

Sometimes the background colour of a card makes it easier for the student to learn a number, word, or set. For example, for some people, it is easier to read from a light-blue page with black text than from a white page with black text.

To make each deck of number-set cards, cut out 11 cards. On each card, illustrate a set with zero to ten items. Use drawings, stickers, or cut-and-pasted pictures to show the sets of items.

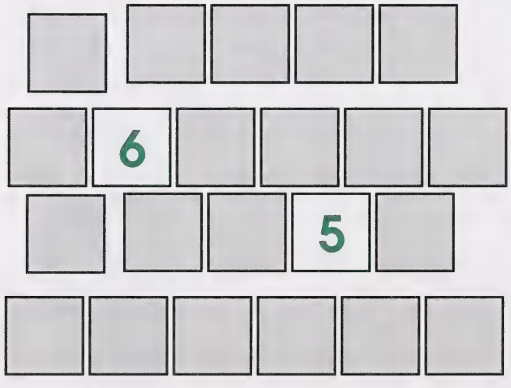
Step 1: Shuffle the two sets of number cards, and place them face down.



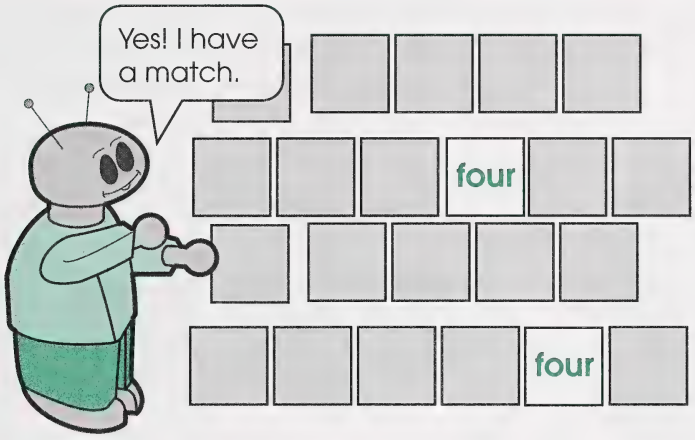
Step 2: Randomly spread out the cards on a table. Take turns placing any two cards face up.

If the two cards match, the player who turned over the cards gets to keep them. If the cards don't match, the player places them face down, and the next person takes a turn.

The winner is the person with the most pairs when all the cards have been turned over.



Step 3: Repeat Steps 1 and 2 with two decks of number-word cards and then two decks of sets-to-ten cards.



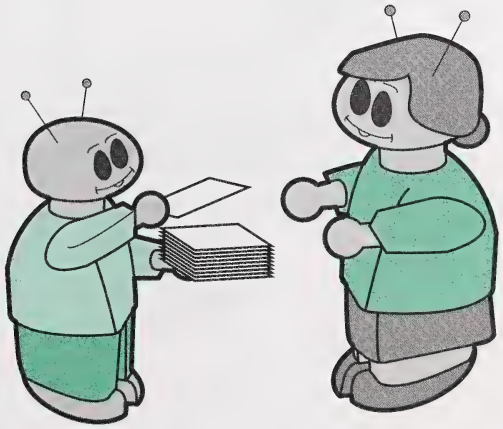
As an extra challenge, mix up the different sets of cards, and find each number to ten in three different ways; for example, find the number 4, the word *four*, and a set of four objects.

2. "War"

Gather the following supplies:

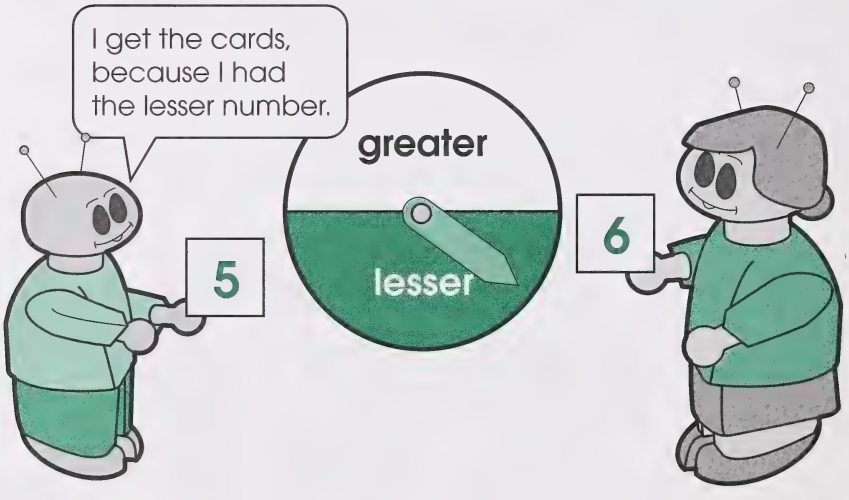
- two sets of number cards
- two sets of number-word cards
- two sets of number-set cards
- greater/lesser spinner

Step 1: Shuffle all the cards together, and then deal equal piles to each player. Place each pile face down.



Step 2: Ask the student to spin the greater/lesser spinner to see which card will determine the winning hand—the greater number or the lesser number.

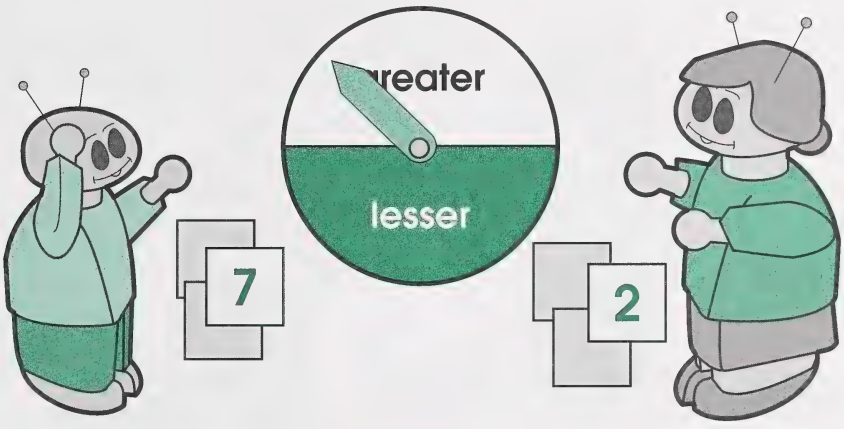
Step 3: Have each player turn over the top card on the personal pile. If the spinner has landed in the greater section, the larger number wins the hand. If the spinner has landed in the lesser section, the smaller number wins the hand.



"War" occurs when each player turns up the same card number at the same time.

When this happens, have each player take three cards from the personal pile and place two face down and the third face up.

The greater or lesser card wins according to what the spinner has landed on. If the numbers happen to be the same again, turn over another card each.

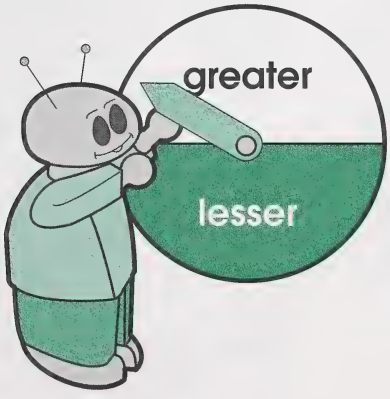


All cards that are won can be placed on the bottom of the winner's personal pile.

Step 4: Continue the game until one person has no cards or until you decide to quit.

To determine the final winner, spin the spinner again.

If the spinner lands in the lesser section, the person with the **least** cards wins. If the spinner lands in the greater section, the person with the **most** cards wins.

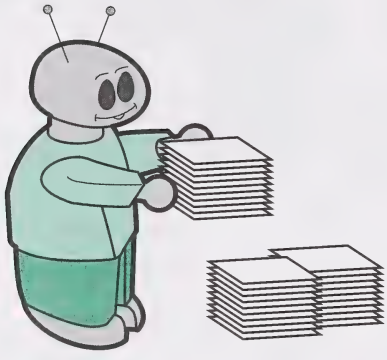


3. Go Fish

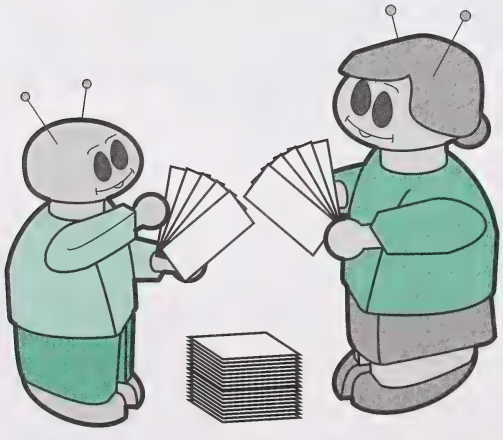
Gather the following supplies:

- one set of number cards
- one set of number-word cards
- one set of number-set cards
- a most/least spinner

Step 1: Mix the three decks together.

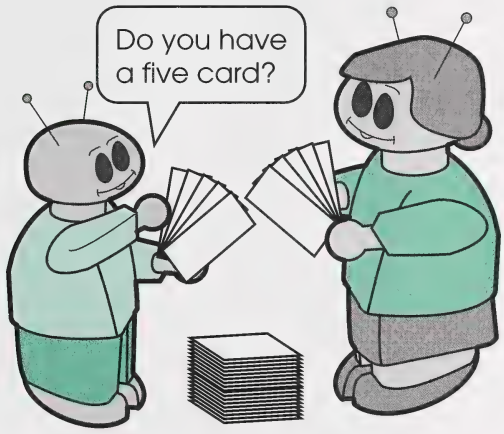


Step 2: Shuffle, and deal five cards to each player. Place the remaining deck in the middle.



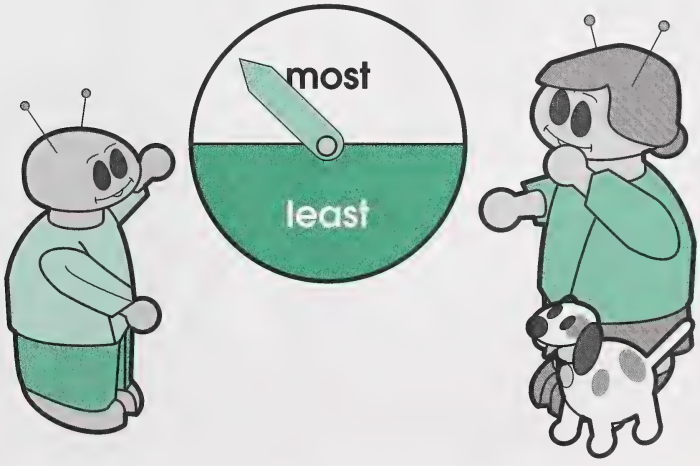
Step 3: Take turns asking one another for a card to make a matching set of three. For example, if you have a card with the word *two* on it and a number 2 card, you could ask the other player for a card with a set of two on it.

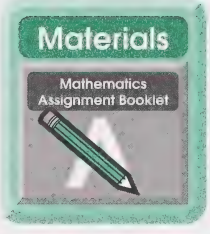
If the other player does not have the card you asked for, that person gets to say "Go fish." You must then pick the top card from the pile in the middle.



Once a set of three has been gathered, place it to the side of the player.

Step 4: The winner could be the player with the most sets of three or the one with the least sets, depending on where the arrow lands on the spinner.





Turn to Mathematics Assignment Booklet 9A, and follow the directions to do the assignment for Day 6.

Day 7

Calendar Time

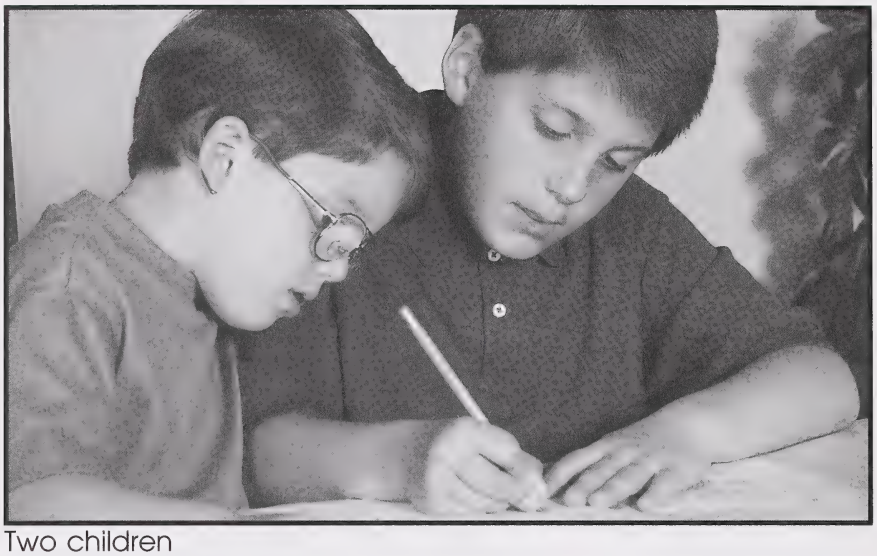
Time recommended: 10 minutes

Begin with Calendar Time activities as usual.

Focus for Today

Time recommended: 45 minutes

- recognizing, building, and comparing sets that contain zero to ten members
- representing and describing numbers to ten in a variety of ways



Two children

Vocabulary (spoken only)

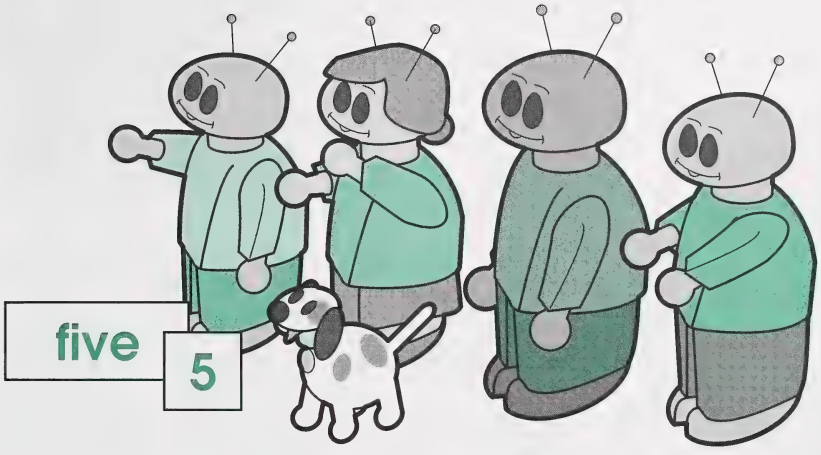
set/sets	second	fifth	eighth
match/matching	third	sixth	ninth
first	fourth	seventh	tenth

Materials Required

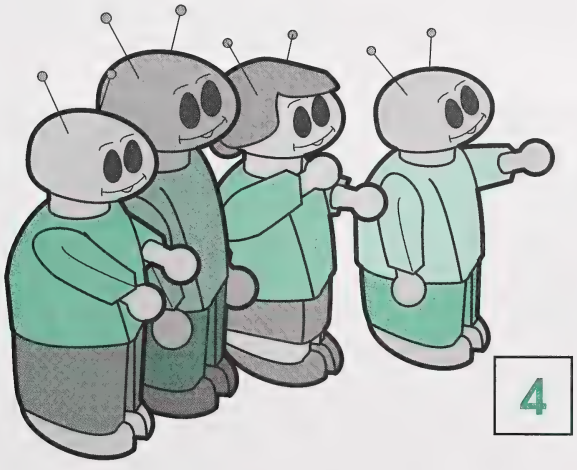
- box containing materials from the master list
- collections of toys, stuffed animals, or other large counters
- number and number-word cards from zero to ten
- a deck of 11 number-set cards (You may have made these in Day 6, Enrichment. If not, you can find directions there to make a set today.)
- 12 game markers, such as pennies or bingo chips

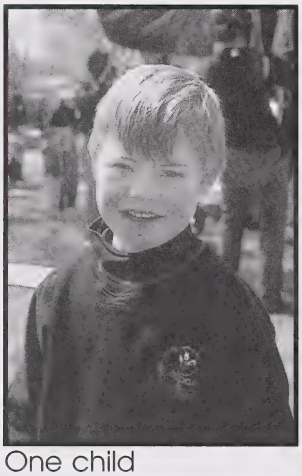
Developing the Concept

Review numbers by placing **sets** of zero to ten people, toys, or stuffed animals in front of the student. Have the student choose the correct number card and number-word card to **match** each **set**.



Vary the game by placing a number card or a number-word card in front of the student and having the student make a **matching** set of items. Guide the student as necessary.





One child

Applying the Concept

Number Game

Gather one deck each of number cards and number-word cards from zero to ten. Also get your number-set cards, if you have some. If you still need to make your number-set cards, follow the directions in Day 6, Enrichment, and help your student make one deck of 11 cards.

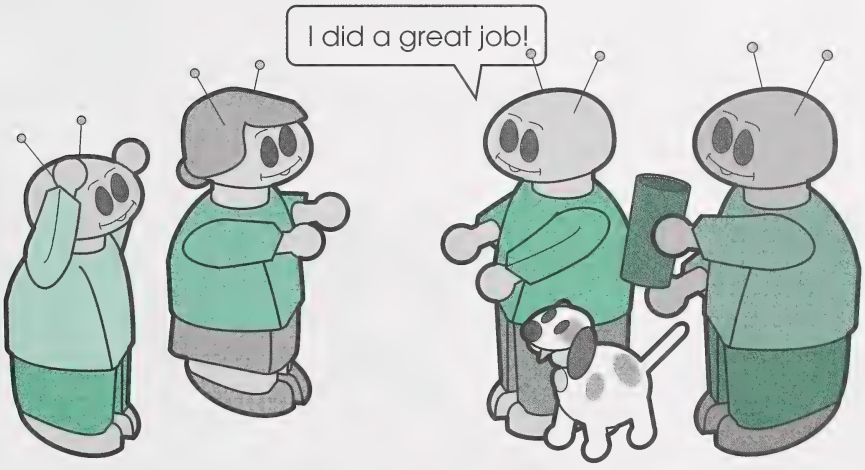
Then make three or four large number-game cards similar to the one that follows. On each card, show a variety of sets, words, and numbers from zero to ten.

one	3	5	nine
seven	10		four
• •	• • •	8	• • • • • •

When the number-game cards have been completed, have the student choose one of them. Set out the 12 game markers. Shuffle together the decks of zero to ten number, number-word, and number-set cards, and place them face down in front of you.

Turn the top card face up, and ask the student to identify the number, set, or number word shown. If the student has the matching number, set, or number word on the chosen game card, have the child place a marker on the matching box.

If the student does not have a match, turn over the next card. Continue the game until the student has placed a marker on each box of the game card.



Consider giving the student a sticker or similar acknowledgment for a filled-in card. Then remove all the markers, and ask the student to identify each number, number word, or number set on the card.

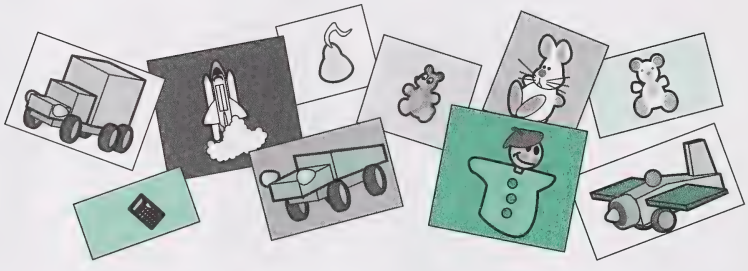
Enrichment (optional)

1. Place the Pictures in Order

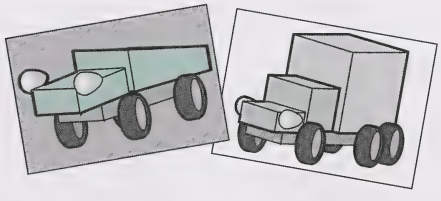
For this activity, you will need the following supplies:

- catalogues and magazines
- construction paper
- safety scissors
- glue

Step 1: Help the student make a set of ten different pictures.

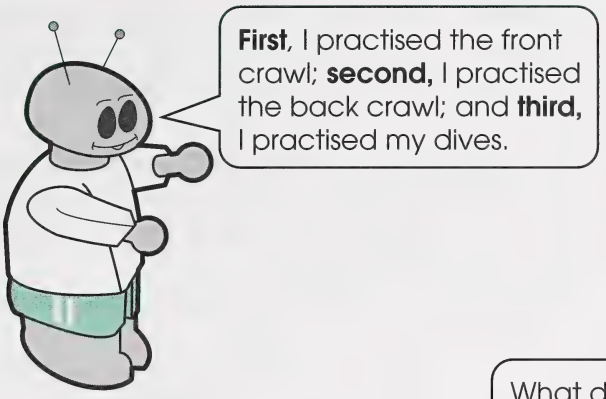


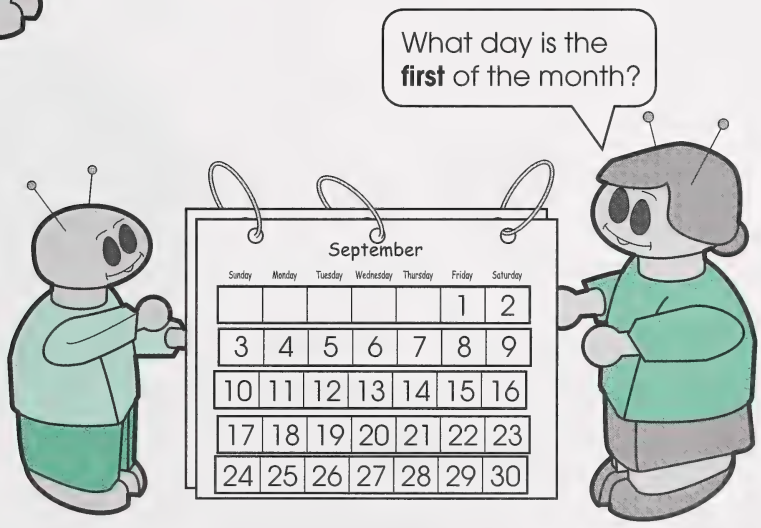
Step 2: Discuss with the student that ordinal numbers help us order things and talk about various situations when they are used. Have the student place the pictures in order according to your directions. For example, you could ask the student to put the car **first** and the truck **second**.

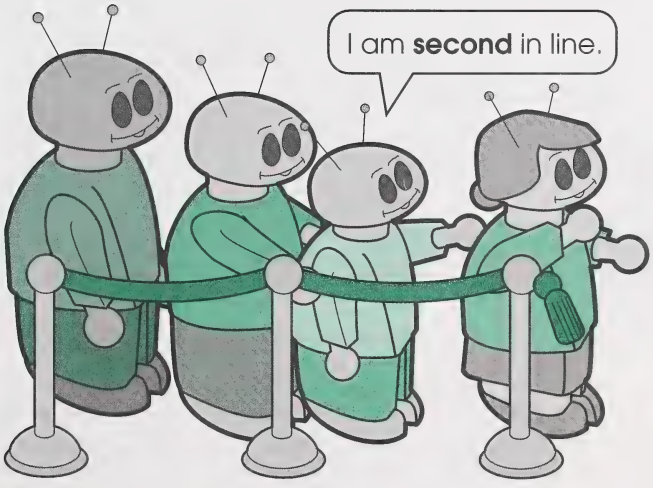


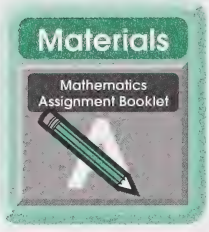
2. Everyday Ordinal Numbers

Look for opportunities in everyday situations where you can reinforce the student's understanding of ordinal numbers. For example, you could find opportunities during calendar activities or while you are waiting in a line-up.


First, I practised the front crawl; **second,** I practised the back crawl; and **third,** I practised my dives.


What day is the **first** of the month?
September
Sunday Monday Tuesday Wednesday Thursday Friday Saturday
1 2
3 4 5 6 7 8 9
10 11 12 13 14 15 16
17 18 19 20 21 22 23
24 25 26 27 28 29 30


I am **second** in line.



Turn to Mathematics Assignment Booklet 9A, and follow the directions to do the assignment for Day 7.

Then complete both pages of Day 7: Learning Log. Under Student's Thoughts, help the student complete the self-evaluation and any additional comments about the day's mathematical learning.

Day 8

Calendar Time

Time recommended: 10 minutes

Begin with Calendar Time activities as usual.

Focus for Today

Time recommended: 45 minutes

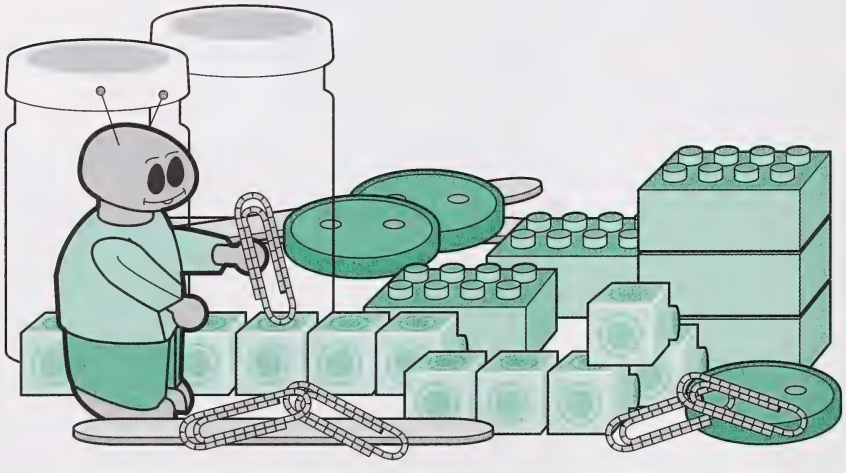
- recognizing, building, comparing, and ordering sets that contain 0 to 19 members
- representing and describing numbers to 19 in a variety of ways

Vocabulary (spoken only)

nineteen (19)	largest	calculate
smallest	missing	

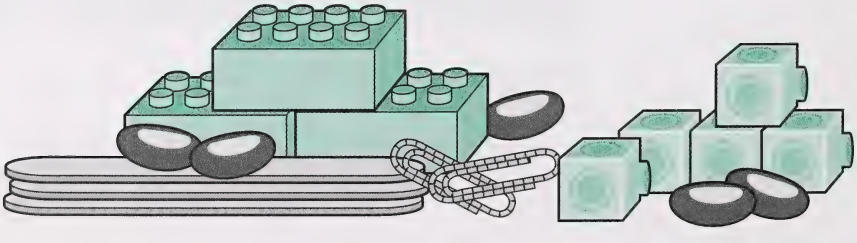
Materials Required

- box containing materials from the master list
- sticks and elastic bands, or interlocking cubes, plastic building bricks, paper clips, or other small counters
- 0 to 19 number cards, previously used in Module 7, Day 3
- 20 baby-food jars or other small, transparent containers (optional)
- beans, bread tags, buttons, or other very small counters (optional)
- one die or number spinner (optional)



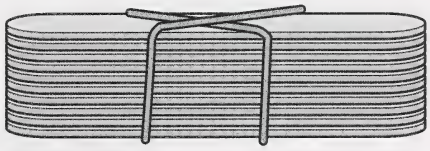
Developing the Concept

Set out some small counters, such as sticks, interlocking cubes, plastic interlocking bricks, paper clips, or dried beans.



Sticks are shown in the following script, but you could substitute other more readily available counters. If using sticks, the student will also need elastic bands.

Ask the student to count out ten sticks and wrap them with an elastic band. Use the script that follows.



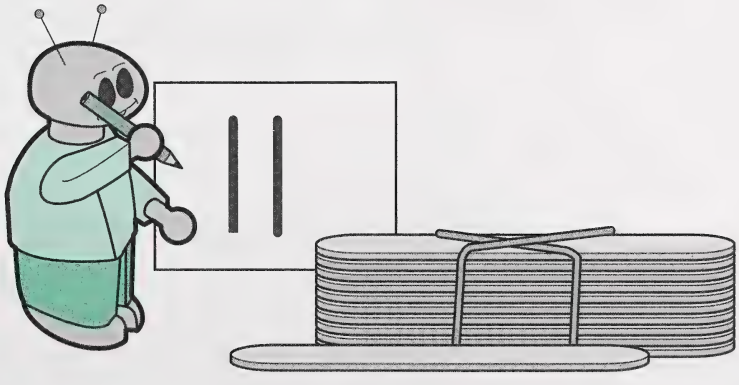
How many sticks are there? (ten, or one ten)

Hand out nine more sticks to the student, and ask the student to place one stick beside the bundle of ten sticks.

How many sticks are there now? (11)

Print the number of sticks on this piece of paper.

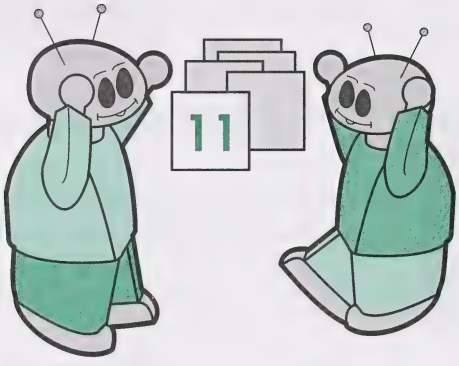
Repeat with the other eight sticks until the student has counted up to **19**. Have the student practise printing and saying the number each time a new set is made.



Applying the Concept

Action Numbers

Set out your deck of 0 to 19 number cards. Take turns picking the top card. Then choose an action such as touching toes, jumping jacks, hopping, or skipping, and perform the action a matching number of times.



Enrichment (optional)

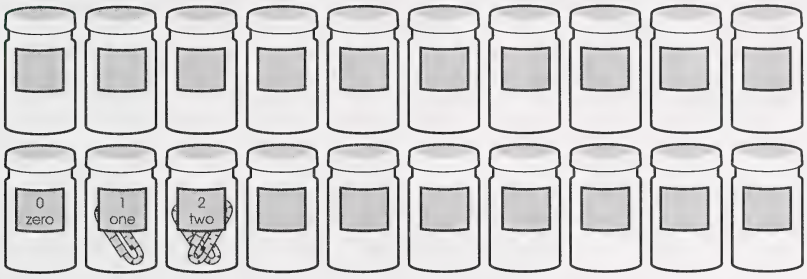
1. Ordering Sets

For this activity, collect the following supplies:

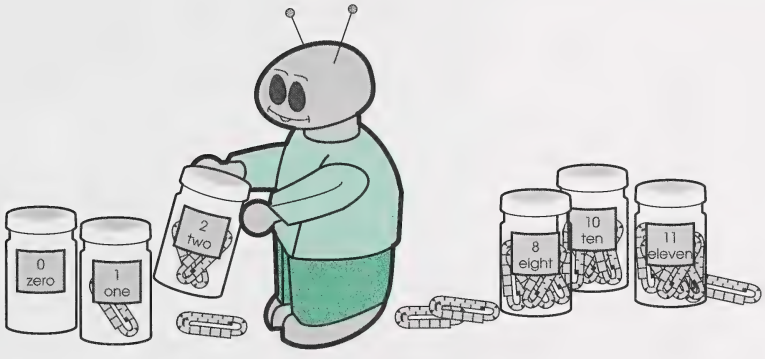
- 20 baby-food jars or other small, transparent containers
- beans, bread tags, buttons, or other very small counters

Step 1: Have the student put from 0 to 19 of the small objects into each container.

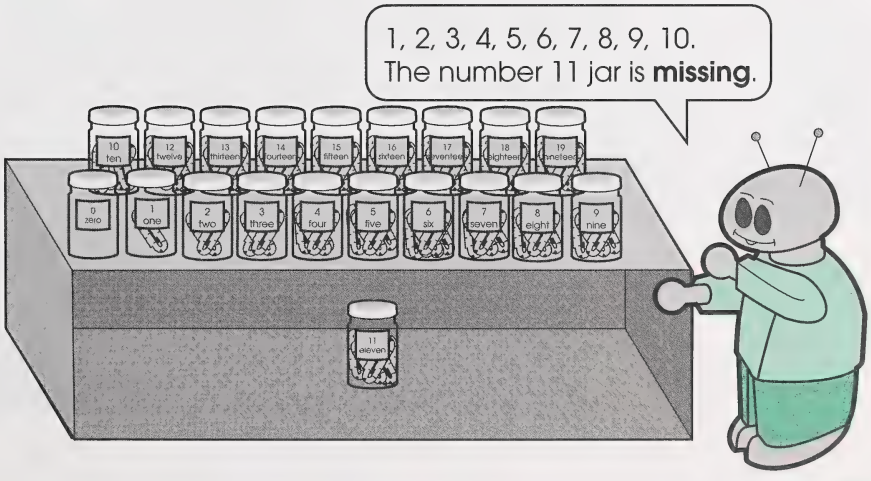
Step 2: Label each container with the number and number word that tell how many objects it contains.



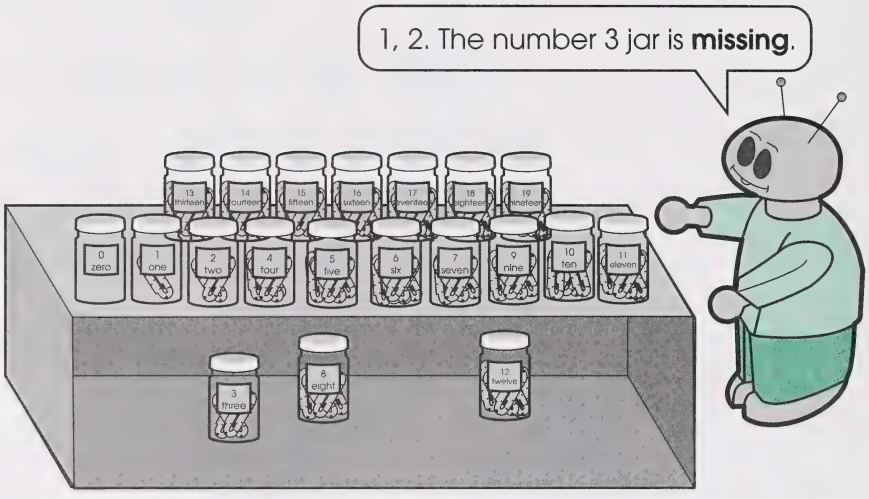
Step 3: Take turns ordering the containers from **smallest** to **largest** and vice versa.



Step 4: Take turns removing and hiding one or more jars from the ordered set. Have the other player figure out which jars are **missing**.



Step 5: Continue the game until the student has practised recognizing, comparing, and ordering sets from 0 to 19.



2. Card Games

Add the numbers 11 to 19 to the three card games from Module 9, Day 6, Enrichment. Those games were Concentration, "War," and Go Fish, all played with numbers zero to ten.

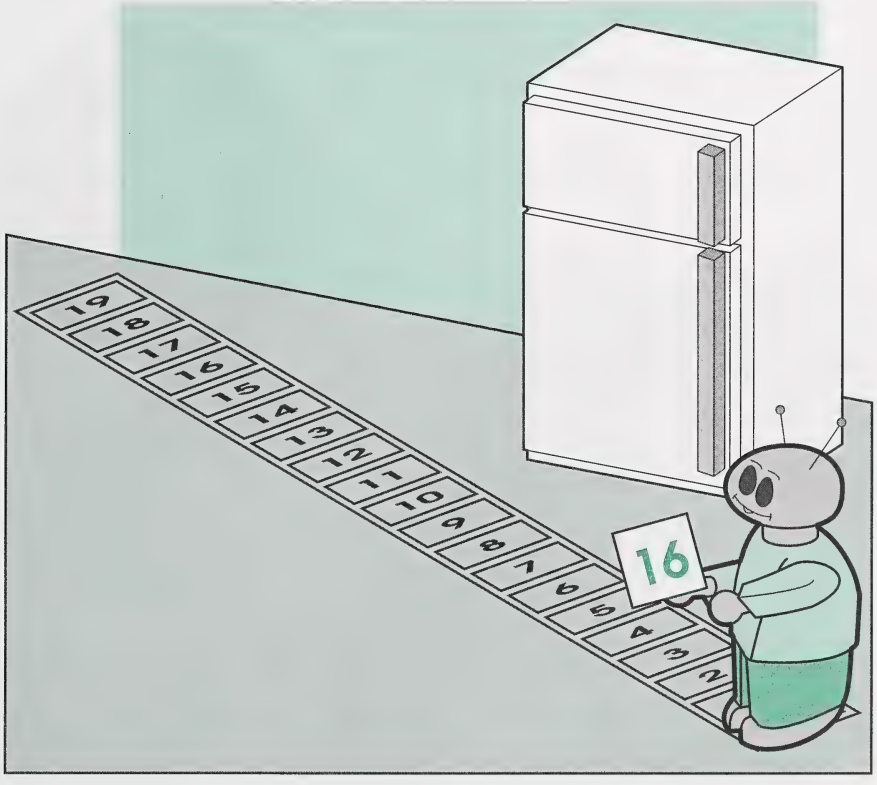
3. Number Line to 19

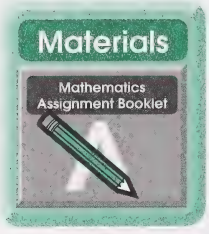
Use wide masking tape on the floor, and mark it evenly from 0 to 19. Stand near the zero space.

Take turns choosing a number card or rolling a die and hopping forward the number of spaces given.

For variety, use a spinner to indicate the movement or give verbal instructions, such as "Move forward" or "Move backward."

Have the person say the number that is landed on.





Turn to Mathematics Assignment Booklet 9A, and follow the directions to do Day 8: Assignment 1.

Next, follow the directions to do Day 8: Assignment 2.

Then complete both pages of Day 8: Learning Log. Under Student's Thoughts, help the student complete the self-evaluation and any additional comments about the day's mathematical learning.

Day 9

Calendar Time

Time recommended: 10 minutes

Begin with Calendar Time activities as usual.

Focus for Today

Time recommended: 45 minutes

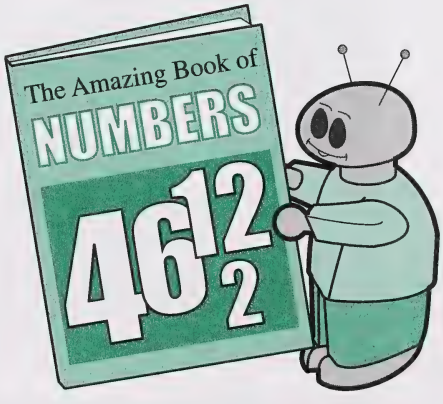
- estimating and counting the number of objects in sets with 0 to 50 members
- comparing the estimate with the actual number and noting the similarities and differences

Vocabulary (spoken only)

more	amount	problems
less	clear	

Materials Required

- box containing materials from the master list
- collections of up to 50 different small counters, for example, marbles, dried beans, buttons, bread tags, and interlocking cubes
- two or more wide-mouthed transparent plastic containers
- a simple calculator (not a scientific one)
- computer (optional)
- ten plastic bags with ten buttons or other small counters in each bag (optional)
- nine loose buttons (optional)
- five dimes and 50 pennies (optional)
- two containers to hold coins (optional)
- die (optional)
- library books about counting (optional, but highly recommended)

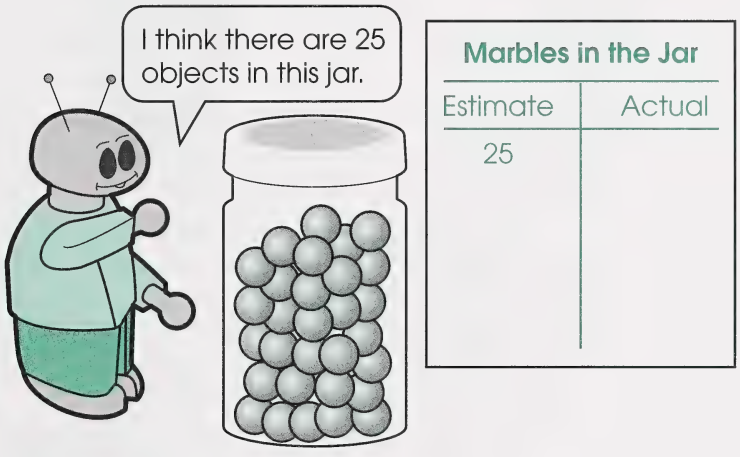


Developing the Concept

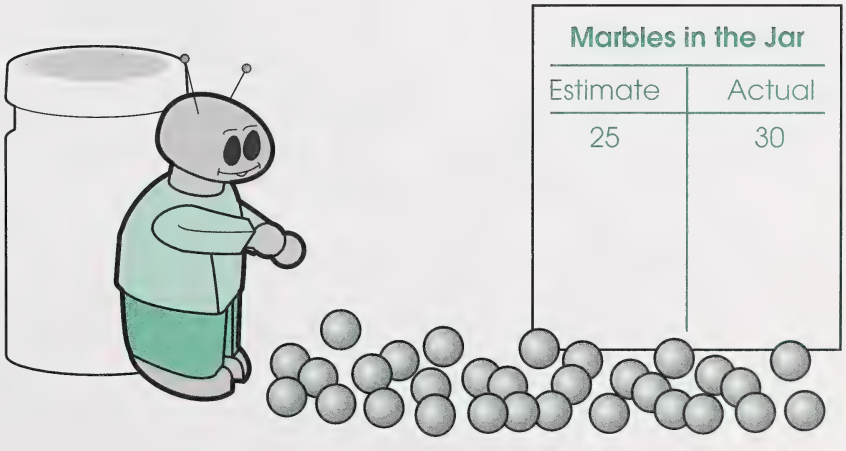
Estimate and Actual Number Chart

Place 30 small objects, such as marbles or dried beans, into a plastic jar.

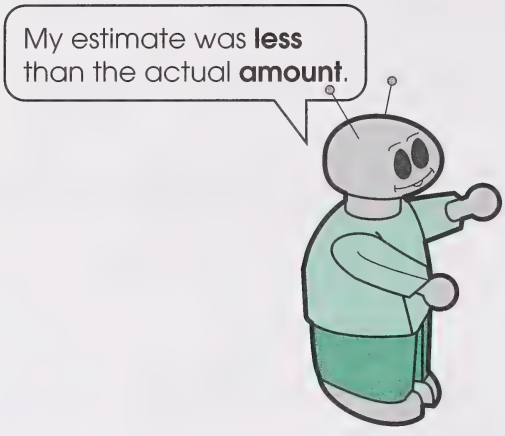
Have the student estimate how many objects are in the jar and then record the estimate on a chart similar to the one that follows.



Ask the student to count the actual number and print that number in the designated column.



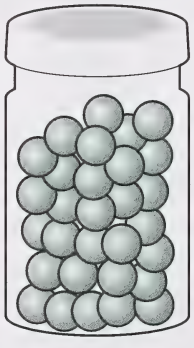
Ask the student whether the estimate was **more** or **less** than the actual **amount**.



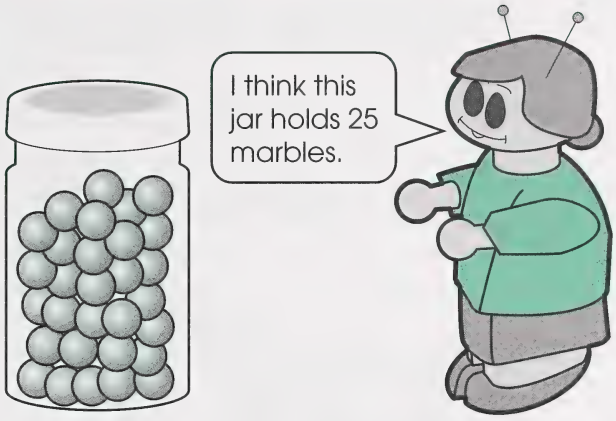
Marbles in the Jar

Estimate	Actual
25	30

Have the student keep this first jar for reference. Discuss how it can be used to help make more accurate estimates.



Take turns placing different numbers of objects from 0 to 50 into a transparent jar. For each amount, repeat the procedure used for the jar with 30 objects.



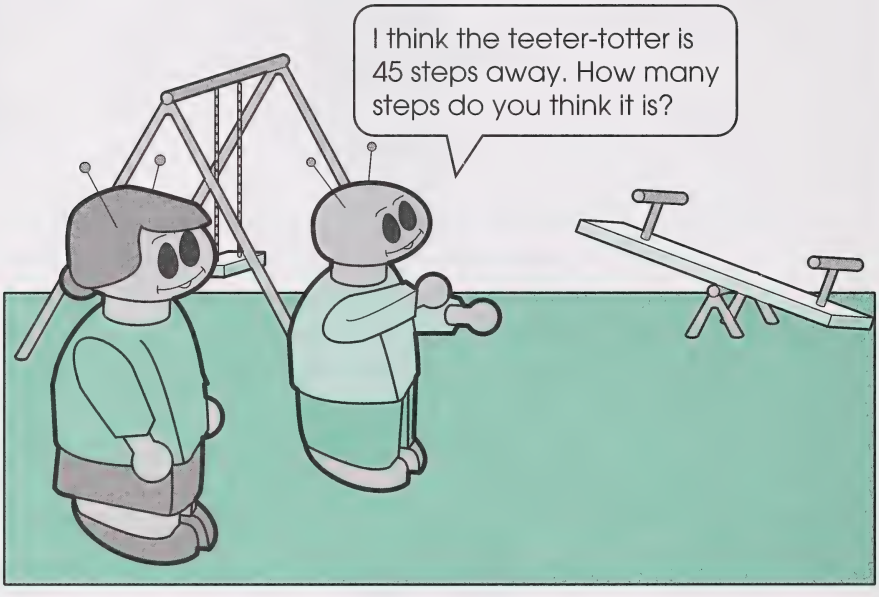
After the student has recorded the estimate and the count for five different amounts, help the student print a title at the top of the chart. You could use the title **Marbles in the Jar**.

Marbles in the Jar	
Estimate	Actual
25	30
30	27

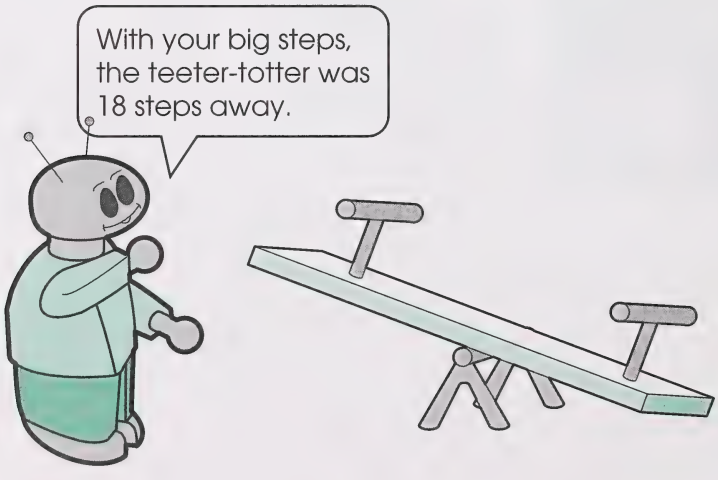
On the back of the chart, have the student's full name printed. Add the abbreviated form of the module and day numbers, M9D9. Place the chart in the Student Folder.

Applying the Concept

Take your student outside. Each of you estimate how many of your own steps it will take to go from one place to the next. For example, how many steps is it from the swings to the teeter-totter? Try to limit the actual number to no more than 50 steps.



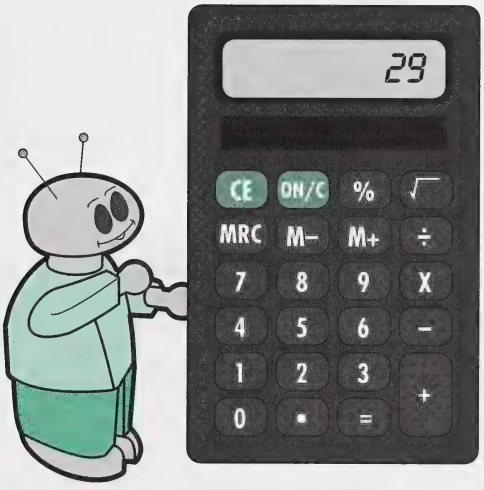
Compare each other's estimates and actual amounts. Discuss why your estimates and counts are different.



Continue until the student has practised counting numbers from 0 to 50 or until the student shows signs of fatigue.

Calculator Time

Have the student show various numbers to 50 on a calculator or a computer screen. For example, ask the student to press the appropriate keys to show the numbers 47, 32, and 29. Check that the student has entered the correct numbers.



Review with the student how to count on a calculator. Explain that to count by ones, the student can press a number, such as 27, and then key in +1, +1, +1, and so on. Suggest that the student start at one number and count by ones to another number, for example, from 18 to 28.

Have the student practise several times. Remind the student to press **C** for **clear** after every example.

Next, have the student practise the following skills:

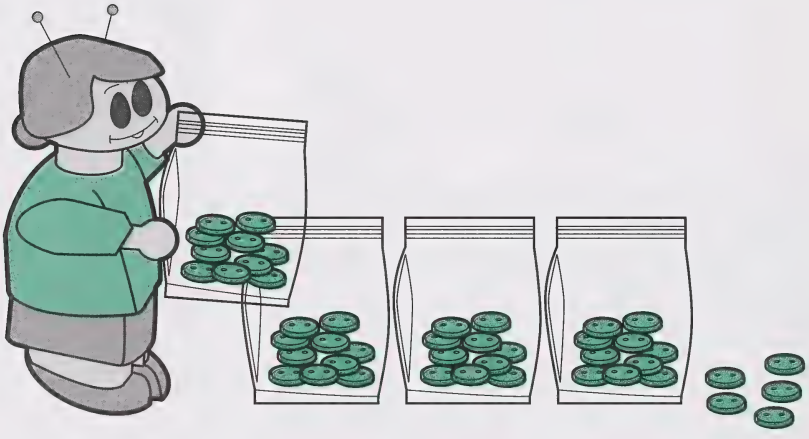
- Show a number more or less than another number, for example, three more than 45.
- Count backward by ones on the calculator by pressing −1, −1, −1, −1.

Enrichment (optional)

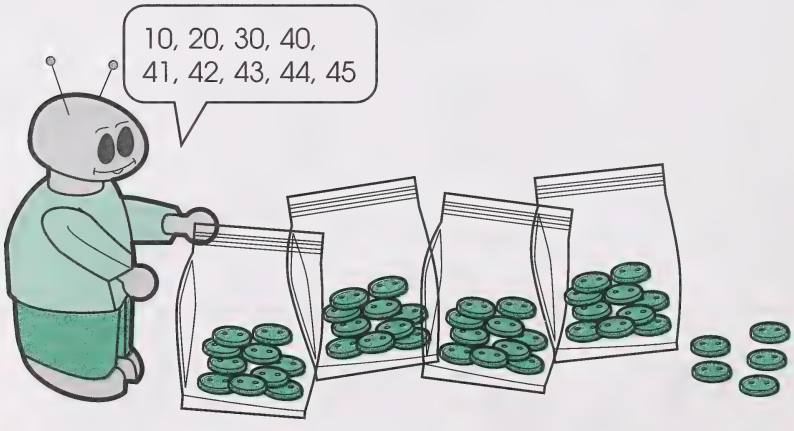
1. What's the Number?

For this activity, gather ten plastic bags with ten buttons or other small counters in each bag plus nine loose counters.

Step 1: Model a number with bags of ten and some loose buttons.



Step 2: Have the student count by tens and then count forward the leftover ones to find your number.

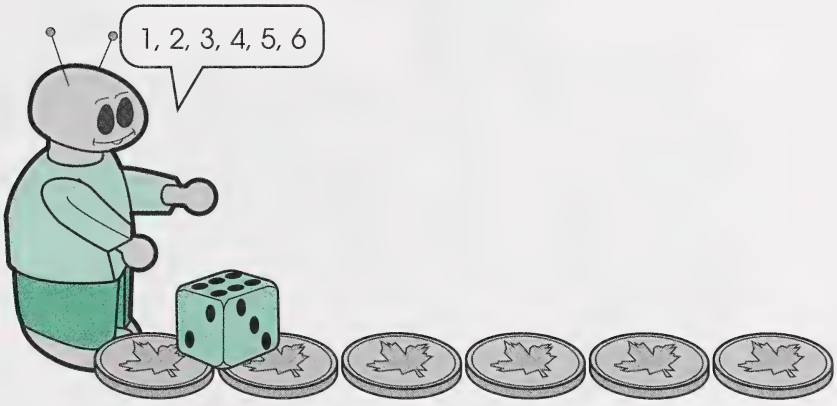


Step 3: Alternate roles, and continue the game until the student shows signs of fatigue.

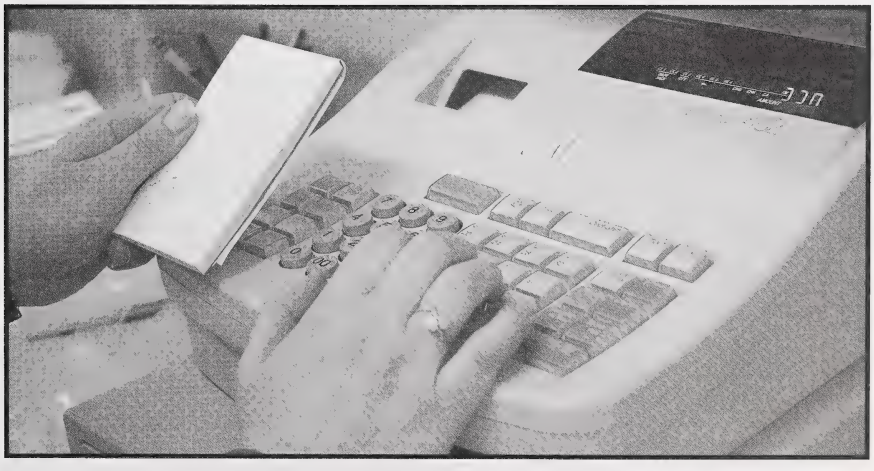
2. Trading Money

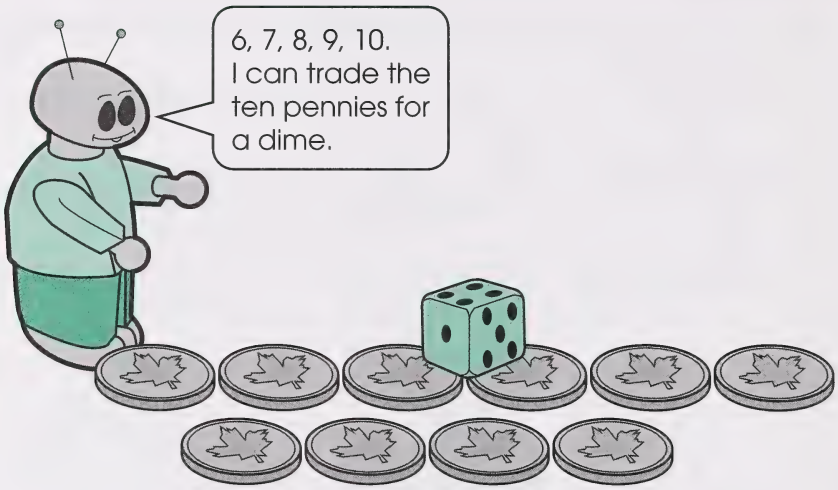
For this activity, gather five dimes and 50 pennies, two containers for the coins, and one die.

Step 1: Roll the die, and have the student count out the number of pennies to match the die.



Step 2: Roll the die again, and encourage the student to count forward to add that number of pennies to the previous number. When the student has ten pennies, trade them for a dime.





Step 3: Take turns rolling the die and trading ten pennies for a dime until the student has practised this type of trade several times to get all five dimes each time.

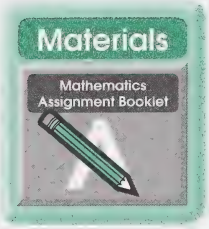
3. Books About Counting

Visit your local library to look for books about number concepts. Following are some suggestions. See the list of Additional Resources at the beginning of this module for others.

- *Count-a-Saurus* by Nancy Blumenthal
- *So Many Cats!* by Beatrice De Regniers
- M*oja Means One* by Muriel Feelings
- *Number Arts: Thirteen 123s from Around the World* by Leonard Everett Fisher
- *How Many Snails?* by Paul Giganti Jr.
- *Ten Potatoes in a Pot and Other Counting Rhymes* edited by Michael Jay Katz
- *Wacky Wednesday* by Theodore Le Sieg
- *One Watermelon Seed* by Celia B. Lottridge

- *Numblers* by Suse MacDonald and Bill Oakes
- *Counting Wildflowers* by Bruce McMillan
- *World of Wonders: A Trip Through Numbers* by Starr Ockenga and Eileen Doolittle
- *How Many Teeth?* by Paul Showers

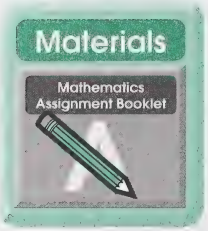
Two heads, two hats



Turn to Mathematics Assignment Booklet 9A, and follow the directions to do Day 9: Assignment 1.

Next, follow the directions to do Day 9: Assignment 2.

Then complete both pages of Day 9: Learning Log. Under Student's Thoughts, help the student complete the self-evaluation and any additional comments about this day's mathematical learning.



At the end of Mathematics Assignment Booklet 9A, follow the directions to complete Day 9, Student Folder Items. Take the required items from your Student Folder. Submit these items and Assignment Booklet 9A to your student's teacher for marking at the time the teacher has requested them.

Day 10

Calendar Time

Time recommended: 10 minutes

Begin with Calendar Time activities as usual.

Focus for Today

Time recommended: 45 minutes

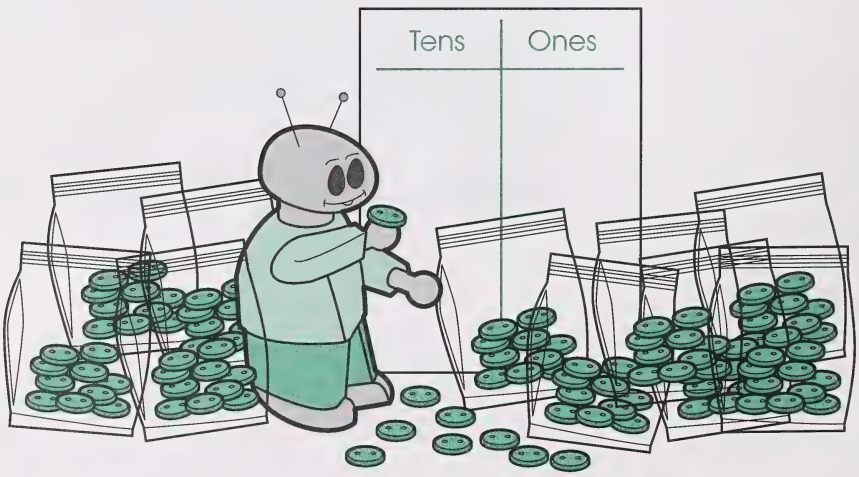
- recognizing and exploring numbers from 0 to 50
- counting orally by ones to 100

Vocabulary (spoken only)

before	alike	column	buyer
after	up	different	shipping clerk
pattern	down	shape	order forms
repetition of a sequence			

Materials Required

- box containing materials from the master list
- five bags of ten buttons and nine loose buttons or other small counters
- one place-value mat (previously used in M6D17)
- Hundred Chart (from the Appendix of the Home Instructor's Manual)
- bingo chips, pennies, or other similar round counters
- large collections of beans, wooden craft sticks, toothpicks, beads or straws, string, elastic bands (optional)
- clear plastic bags (optional)
- interlocking cubes or other small counters (optional)
- 0 to 50 number cards

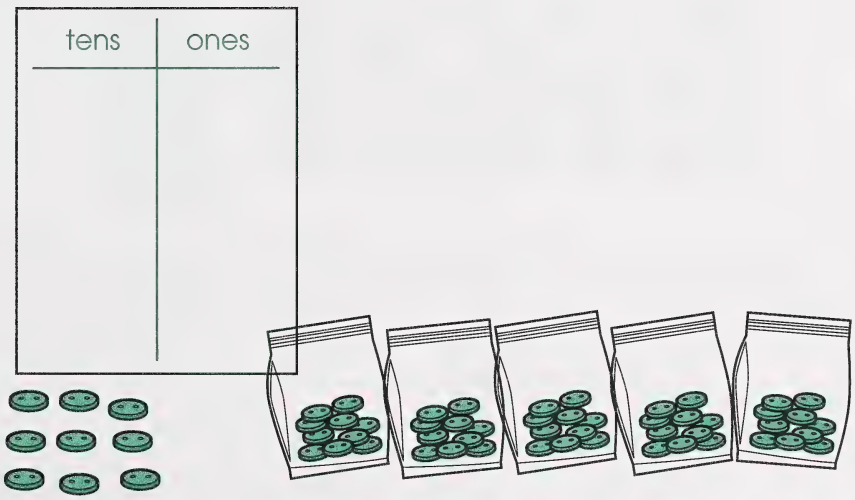


Developing the Concept

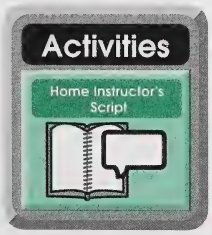
Numbers to 50

In front of the student, place five bags of ten buttons, nine loose buttons, and a place-value mat. The five bags represent ten each, or the number 50 in total.

For the number 50, the student will not need the loose buttons. For any number below 50, the student will not need one of the bags of ten.



Talk about the mat, where to place the bags of ten on it, and where the single buttons go. Guide with the following script.



Show me a bag of ten buttons.

Where should you put this set of ten on your mat?

Now, show 20 buttons on your mat.

Show 30 on your mat.

Now show 31, 32, 33, and 34.

How did you do it?

Use the bags of ten and the loose buttons to take turns making a number from 0 to 50 on the place-value mat.

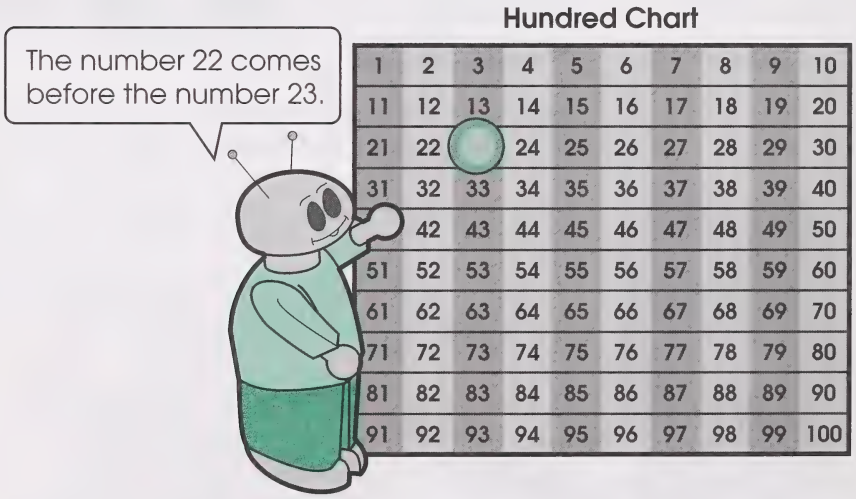
After each player makes a number on the mat, have the other player say what the number is and then print it on a sheet entitled **My Numbers from 0 to 50**.

My Numbers from
0 to 50

49

Next, guide the student to place a bingo chip or penny on the Hundred Chart over each number from your printed list.

Talk about the numbers that come **before** and **after** the numbers that you cover.



Applying the Concept

Remove the bingo chips from the Hundred Chart, and place this chart in front of the student.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Ask the student to look at the Hundred Chart, and then proceed with the following script.

> Tell why you think this chart is called a Hundred Chart.
>
> Describe a pattern you see in the chart.

If necessary, remind the student that a **pattern** is the **repetition of a sequence**. For example, a pattern in the sequence of numbers 21, 31, 41, 51 is that the number one is repeated in the same position each time. A second pattern is that each number increases by ten.

Take turns finding patterns and describing one another's patterns until the student shows an understanding of patterns.

> Tell something that is **alike** for all the numbers in the **column** that begins with the number five. A **column** goes **up** and **down**. If necessary, guide the student to pick out the pattern.

How are the numbers **different**?

How are the numbers in the **columns before** and **after** alike? How are they different?

Now, try something else.

I will help you cut out a piece of paper shaped like this.

Take this **shape** and lay it on the chart.

Hundred Chart

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35		37	38	39	40
41	42	43	44	45		47	48	49	50
51	52	53	54			57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

What numbers did you cover?

Take turns laying down this shape in different places on the Hundred Chart and asking the other player to figure out the numbers covered without peeking under the shape.

Continue the game with different shapes, such as a rectangle and a square.

Enrichment (optional)

At this point, your student may need extra help or a challenge. If so, postpone the final assignment and your Learning Log comments until after one or more of the Enrichment activities.

Note: Use of these optional activities may require you to pace the student's progress throughout the module to accommodate special needs. For example, you will probably have to delay the final assignment until a later day. If this happens, include a review of pertinent information before completing the assignment.

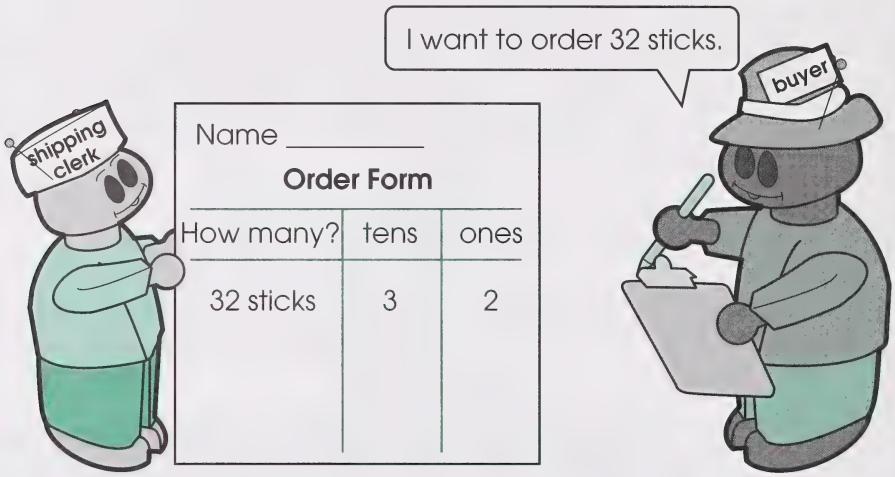
1. Making Groups of Ten

Help the student show groups of ten using the following items or other suitable substitutes. Take turns counting various groupings of ten.

Materials	Procedures	Product
• small items • clear plastic bags	• Place 10 items in a clear plastic bag.	• items in a bag (a bag of 10) 
• beans • wooden craft sticks • glue	• Glue 10 beans on a stick.	• a bean stick 
• beads or straw pieces • string	• String 10 beads on a string.	• a bracelet 
• raindrops and circles cut from blue paper	• Glue 10 raindrops on each circle to make a puddle.	• a puddle 
• wooden craft sticks • elastic band	• Bundle 10 sticks together.	• a log 

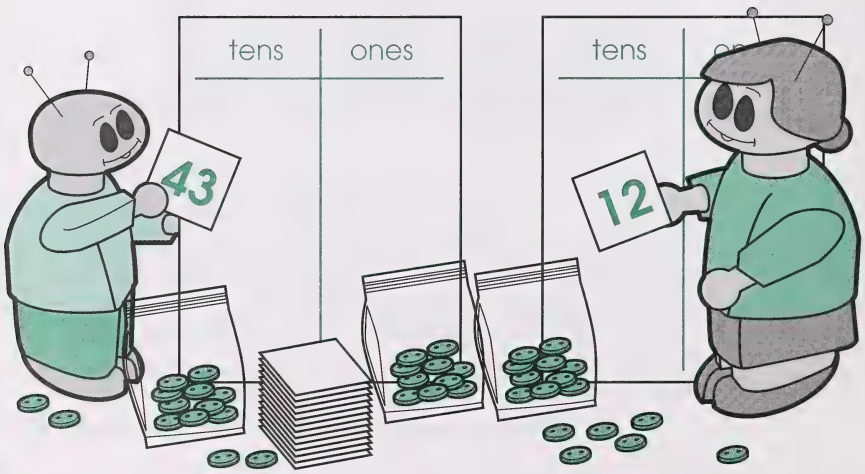
2. Working at the Factory

Take turns being the **buyer** (placing the order) and being the **shipping clerk** (packaging the order). Before opening the factory for business, make **order forms** similar to the following and gather collections of things, such as small toys, for purchase.



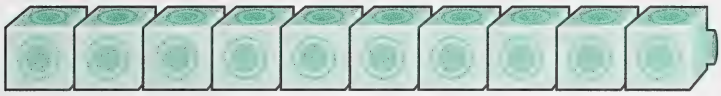
3. Greater or Lesser Number Game

Each player will need a place-value mat. Gather a large collection of interlocking cubes or other small counters to share and the 0 to 50 number cards.

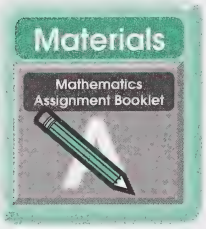


Have one player shuffle the cards and place them face down on the table. Have each player then pick a card from the top of the deck and use counters to make the chosen number on the place-value mat.

Group the tens in some way. For example, bundle sticks, put buttons in bags, or stack ten same-coloured interlocking cubes together.



When each person has made a number, discuss which number is greater and which one is lesser.



Turn to Mathematics Assignment Booklet 9B, and follow the directions to do Day 10: Assignment 1.

Next, follow the directions to complete Day 10: Assignment 2.

Day 11

Calendar Time

Time recommended: 10 minutes

Begin with Calendar Time activities as usual.

Focus for Today

Time recommended: 45 minutes

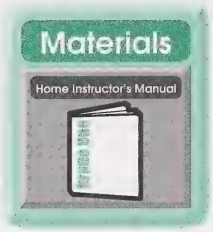
- recognizing and building numbers from 0 to 50
- counting orally by ones, twos, fives, and tens to 100

Vocabulary (spoken only)

column	before
after	between
count forward	count backward

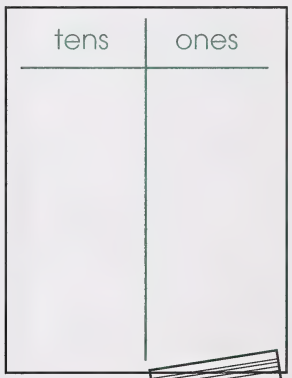
Materials Required

- box containing materials from the master list
- place-value mat
- five bags or bundles of ten objects and nine loose objects
- a suitably-sized piece of paper or another suitable substitute to hide numbers on the Hundred Chart (optional)
- Hundred Chart (from the Home Instructor's Manual)



Hundred Chart

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100



Developing the Concept

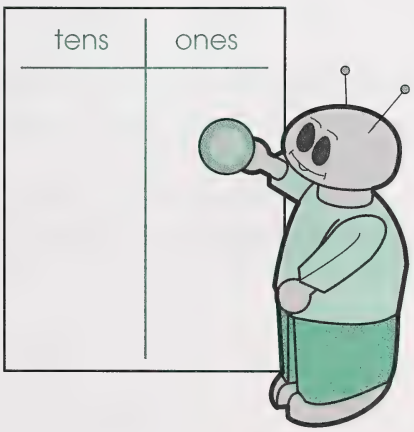
Make a blank hundred chart from a large piece of heavier-weight paper. Display it where the student can easily view it and fill in the missing numbers.

		3							
11									
21									
									100

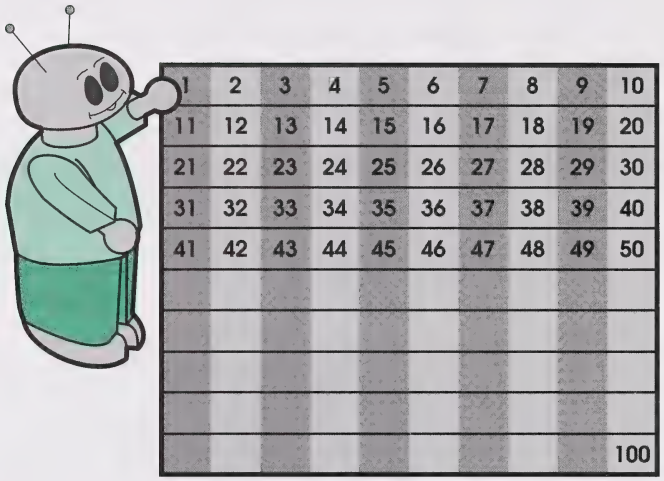
In the bottom-right corner of the chart, print the number 100. Explain to the student that this chart could show numbers to 100, but for now only numbers to 50 will be discussed.

Guide the student to review numbers and count by tens to 50 by asking the student to show and name sets on the place-value mat. Use the following dialogue to guide your discussion.

Place a set of 1 on your mat in the ones **column**.



Where would you put this number on the hundred chart? Guide the student as necessary.



1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
									100

What number comes **after** the number 1 on the hundred chart? (2)

Show the number 2 on your place-value mat.

Now, print the number 2 on the hundred chart.

Place one set of ten on your place-value mat in the tens **column**.

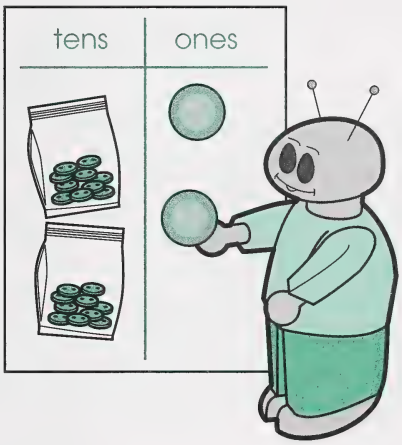
What do we call one ten? (10)

Record this number in the correct space on the hundred chart.

Take turns making numbers to 50 on the place-value mat and adding these numbers to the hundred chart.

Encourage the student to estimate how many counters are on the place-value mat prior to counting. Compare the estimate to the actual count.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
									100



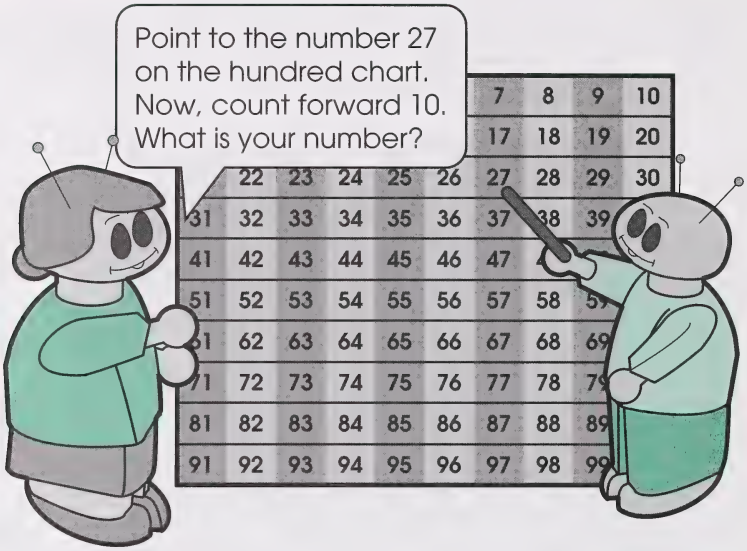
Applying the Concept

Using the hundred chart that was just completed to 50, take turns picking a number and counting a given number forward. If the student chooses a number above 50, print the number and subsequent numbers on the chart, and then have the student **count forward** to 100 from that number.

The student may count by ones, twos, fives, or tens. Use the following dialogue to guide you.

> Pick a number and count 10 more.
>
> Where did you stop?

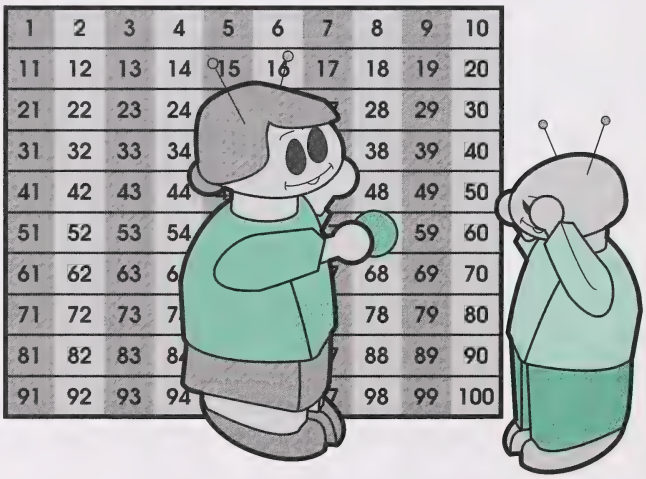
Continue this activity until the student has had an opportunity to practise counting forward or until the student becomes tired.



Enrichment (optional)

1. Hidden Number

Give the student a few moments to study a completed hundred chart. Then, with the student's eyes closed, you cover one number with a piece of paper.



Invite the student to look at the chart again, and ask the following question.

What is the hidden number?

Encourage the student to explain which is the hidden number using the vocabulary **before**, **after**, and **between**. For example, 23 is the hidden number because 23 comes after 22, before 24, or between 22 and 24.

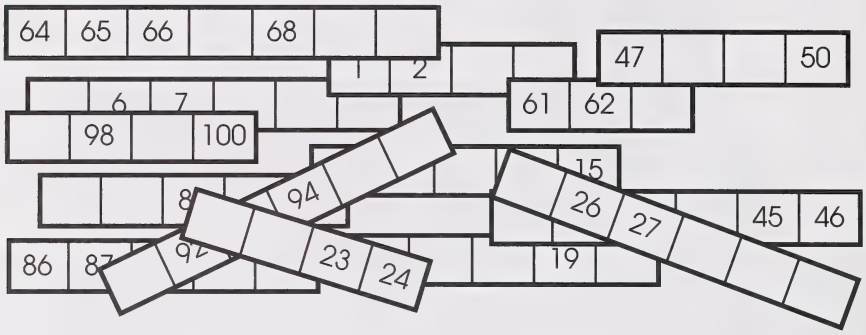
If your student has difficulty determining the hidden number, focus on fewer numbers at a time, for example, a grouping of five consecutive numbers instead of the Hundred Chart. Increase the number of squares displayed when the student is ready for more challenge.

2. Hundred Chart Jigsaw

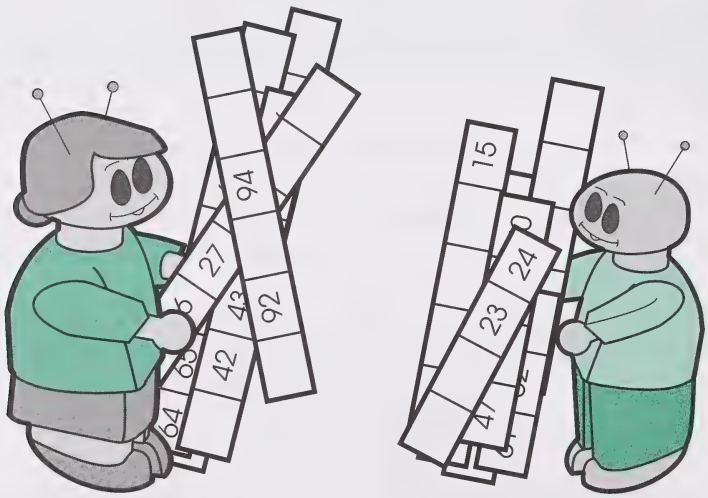
Step 1: Help the student make a blank hundred chart. Fill in some numbers at random.

1	2				6	7			
11				15				19	
		23	24		26	27			
		33		35	36				40
	42	43		45	46	47			50
51		53				57	58	59	
61	62		64	65	66		68		
		73	74			77			80
		83			86	87			
	92		94				98		100

Step 2: Cut the numbered chart into strips of varying lengths, so that each strip has at least one of the recorded numbers.



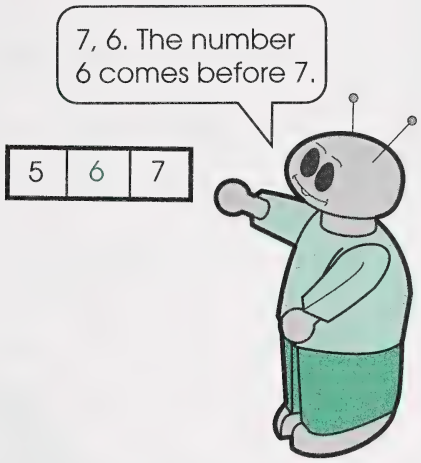
Step 3: Divide the cut-up hundred strips between you and the student, and challenge one another to fill in the blank squares on your share of the strips.



Monitor each other's progress, and occasionally make a mistake to check the student's knowledge of the numbers to 100. If the student is having difficulty, discuss the following:

- What number comes **before?**
- What number comes **after**?
- Start at the number given and count forward. Print the numbers you say.

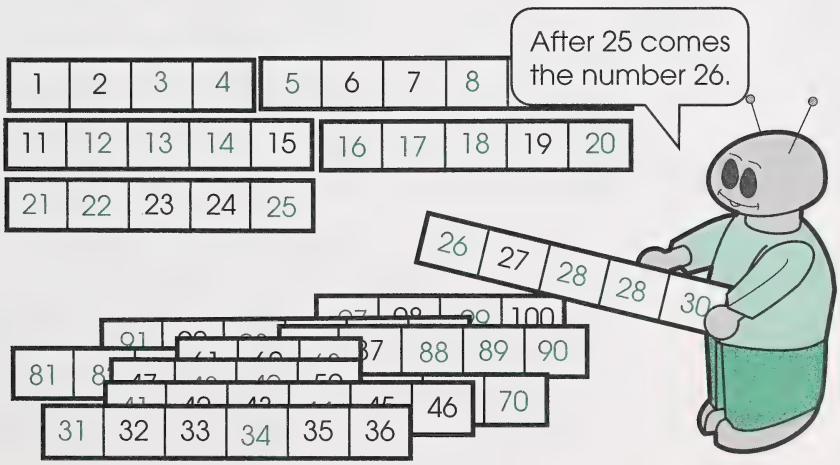
- **Count backward** from the given number, and record what you say.

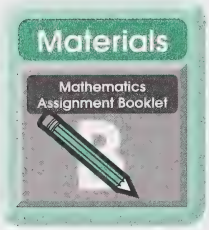


Step 4: When all the strips are filled in, challenge the student to put them together again to make the hundred chart. Guide the student by asking the following questions:

- What strip would come first?
- How do you know?
- What number starts the next strip?

Continue in this manner until the hundred chart has been completed.





Turn to Mathematics Assignment Booklet 9B, and follow the directions to do Day 11: Assignment 1.

Next, follow the directions to complete Day 11: Assignment 2.

Then complete Day 11: Learning Log. Under Student's Thoughts, help the student complete the self-evaluation and any additional comments about the day's mathematical learning.

Day 12

Calendar Time

Time recommended: 10 minutes

Begin with Calendar Time activities as usual.

Focus for Today

Time recommended: 45 minutes

- count by tens to 100

Vocabulary (spoken only)

ten	fifty	ninety
twenty	sixty	hundred
thirty	seventy	pattern
fourty	eighty	repetition of sequence

The numbers ten to one hundred are not found in the text of this day's lesson, but the student will need to say them when counting by tens to one hundred.

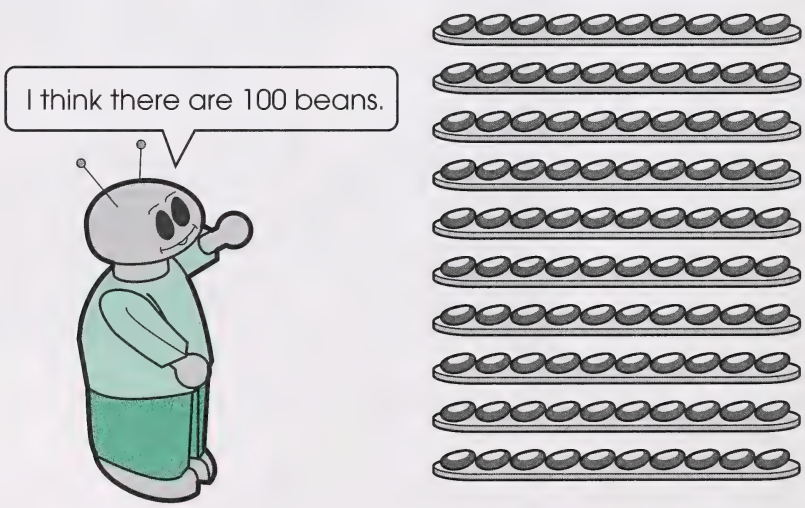
Materials Required

- box containing materials from the master list
- ten groups, bags, or bundles of ten
- Hundred Chart (previously used in Module 9, Day 11)
- hundred number line (previously used in Module 6)
- flashlight (optional)
- 100 pennies and ten dimes
- a simple calculator (not a scientific one)
- beanbag or another suitable substitute (optional)
- chalk (optional)
- skipping rope (optional)

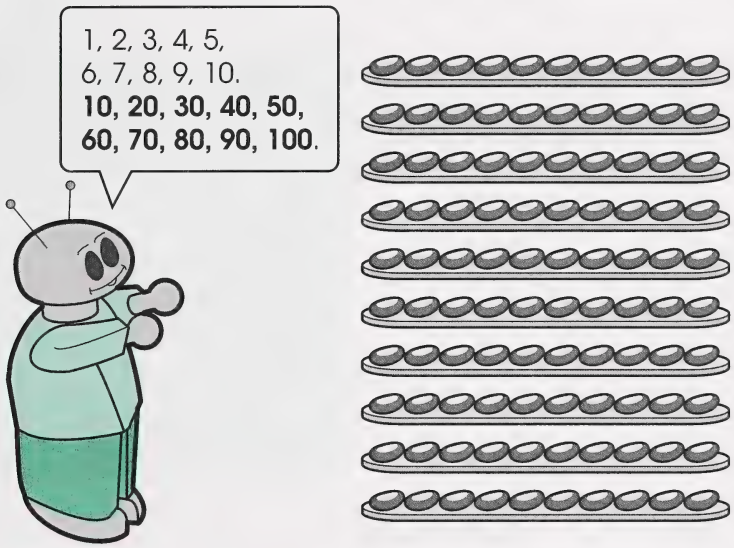
Developing the Concept

Place **ten** groups, bags, or bundles of ten in front of the student, and ask for an estimate of how many counters there are.

Record the estimate on a sheet of paper.

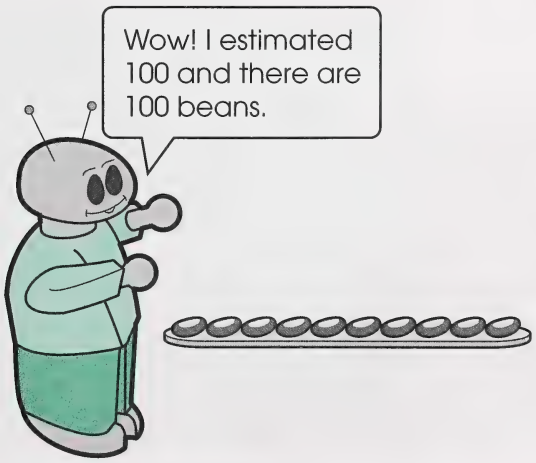


Now, ask the student to count the groups. Record the count beside the estimate.

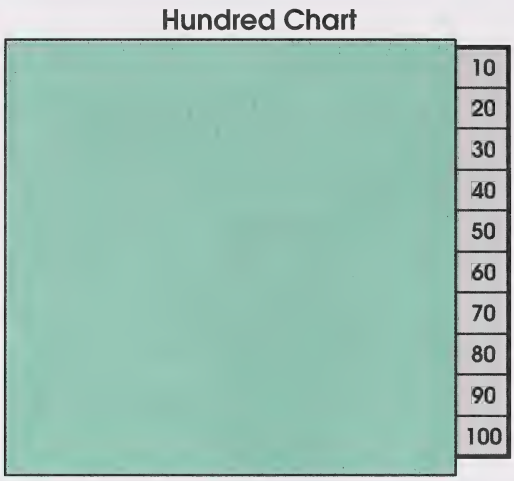


If the student does not initially count by tens, encourage this on a second count.

Have the student compare the estimate to the actual count. Discuss the difference, if any.

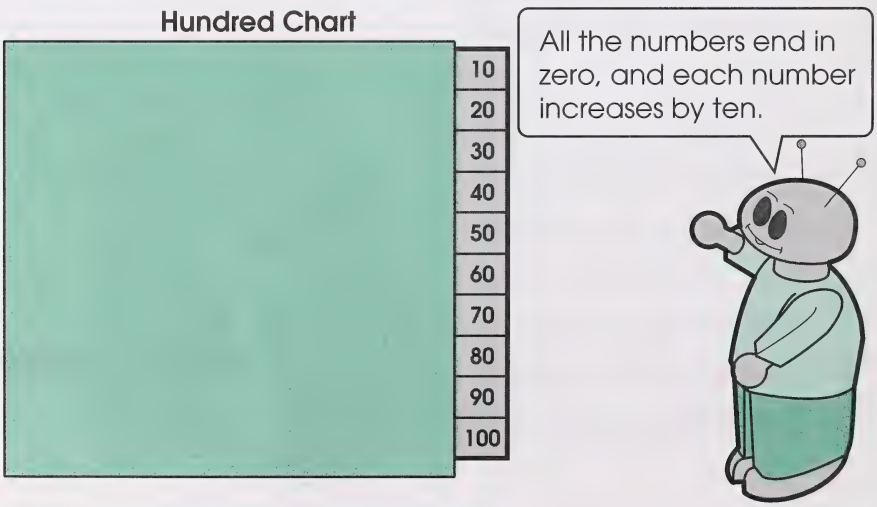


Cover all numbers except the ones that end in zero on the Hundred Chart. Have the student count orally by tens. Help as necessary



Next, challenge the student to find a pattern. Review that a **pattern** is a **repetition of a sequence**.

If the student does not tell you that the number zero is repeated in the same position for each number and that each number increases by ten, focus attention on these patterns.

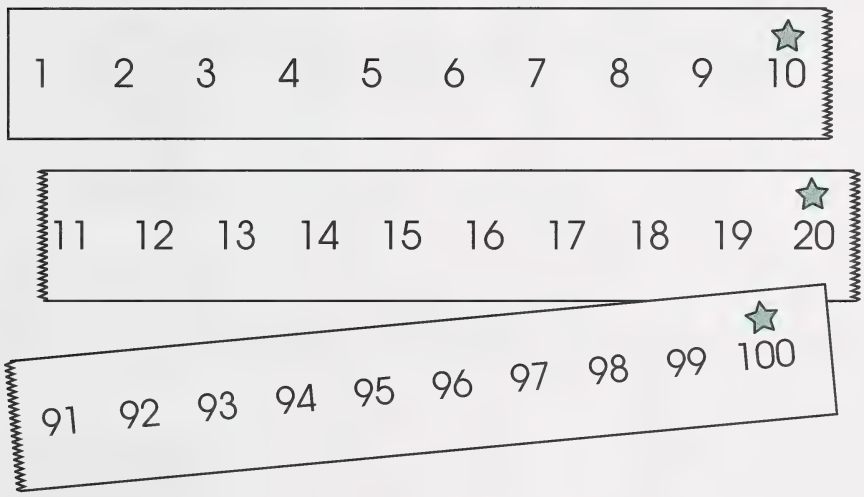


Then briefly spend some time showing one another a different pattern and then describing it, for example, 1, 2, 1, 2, 1, 2.

Applying the Concept

Hundred Number Line

Display the hundred number line at the student's eye level. Have the student point to and count aloud three times by tens to one hundred. To aid the student, you could place a coloured sticker above each number ending in zero.

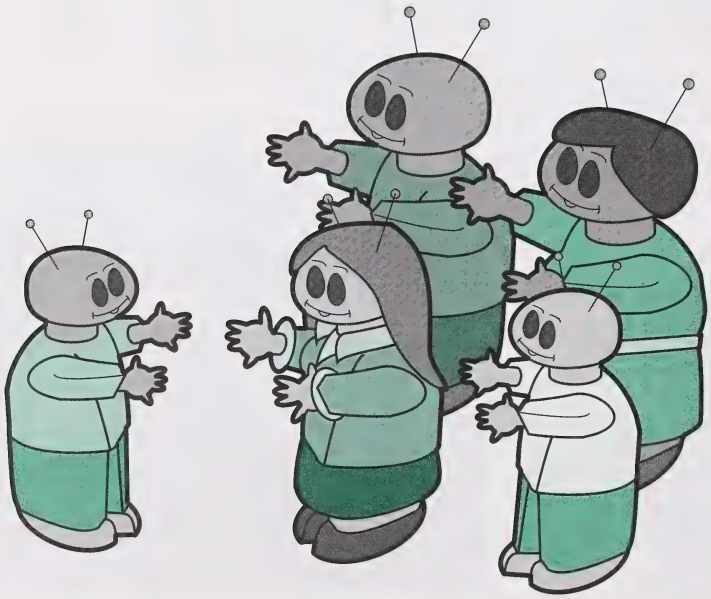


Vary the approach; for example, you could darken the room and have the student use a flashlight to point to each multiple of ten on the hundred number line.

Next, challenge the student to count by tens to determine how many toes or fingers various groupings of people would have.

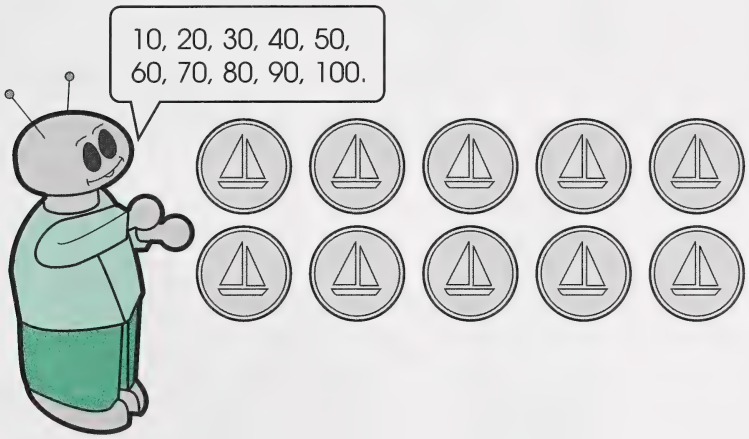
If possible, have the given number of people display ten fingers or toes to aid the student in counting.

If a family member or friend does not have five fingers per hand or two hands, add the total number of fingers that the person does have to the final count. Then use other groupings of ten to count by tens.



Finally, place 100 pennies in front of the student and ten dimes in front of you. Ask the student to count out ten pennies and then trade each set of ten pennies for one of your dimes.

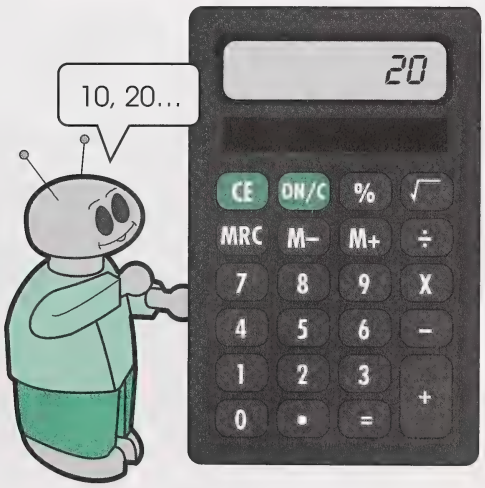
Once the student has traded all 100 pennies for your dimes, have the child count the dimes by ten to 100.



Calculator Time

Skip count by tens to 100 by repeating the following key sequence on a calculator:

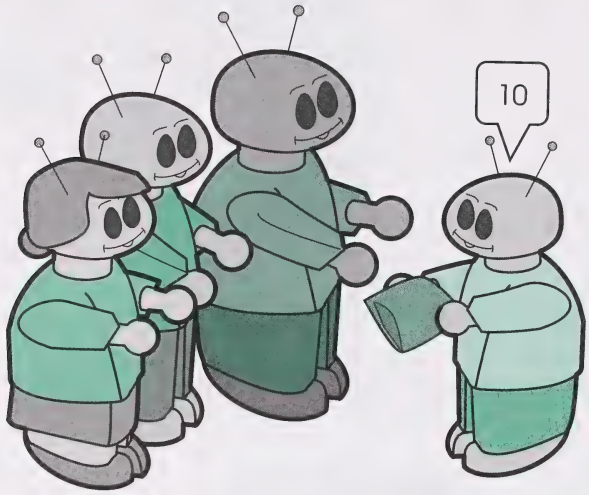
If you have a computer or adding machine, you could have the student skip count on these machines as well.



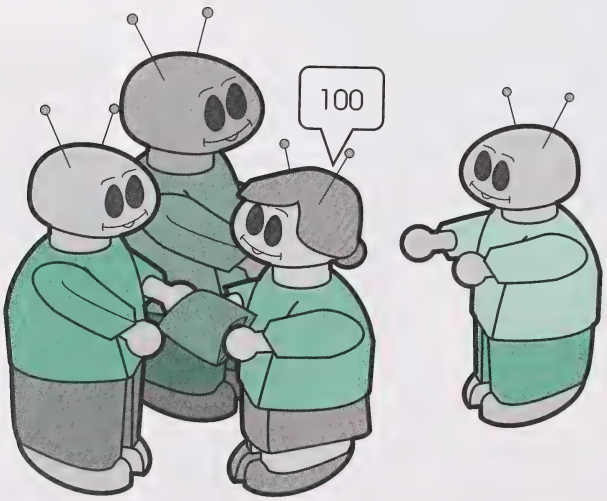
Enrichment (optional)

1. Pass the Beanbag

Pass a beanbag from person to person. As each person handles the beanbag, that person can say the next number in the series of counting by tens.

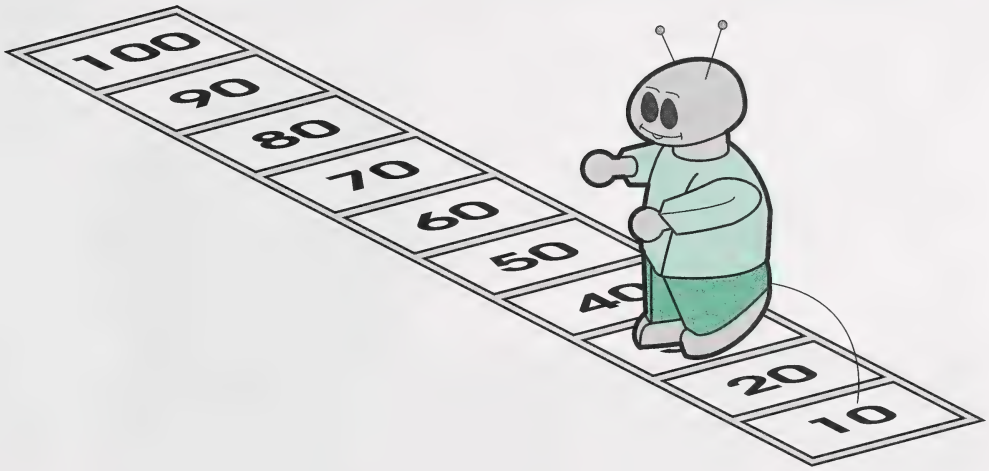


Stop counting at 100 unless the student is capable of counting to a higher number.



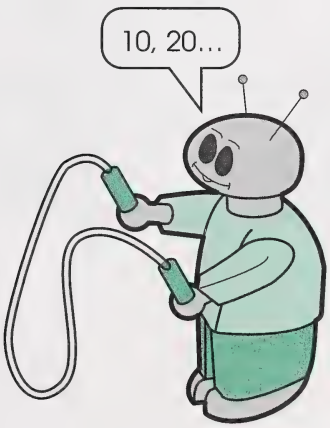
2. Hopping by Tens

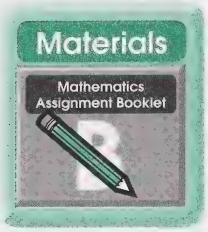
Make a counting-by-tens hopscotch. To do this, use a piece of wide masking tape on the floor or chalk on a sidewalk. Be sure that the spaces your student is required to hop on are equal and reasonable hopping distances apart.



Encourage the student and other people to hop on the number line and count aloud by ten on each hop.

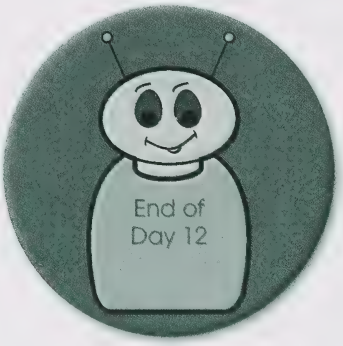
You could also use a skipping rope. Count aloud by ten on each skip.





Turn to Mathematics Assignment Booklet 9B, and follow the directions to do Day 12: Assignment 1.

Next, follow the directions to complete Day 12: Assignment 2.



Day 13

Calendar Time

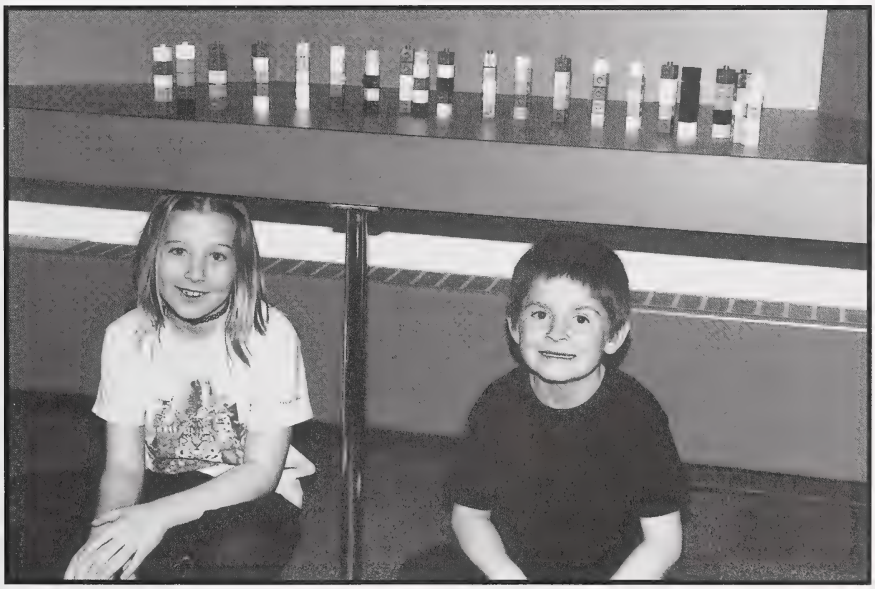
Time recommended: 10 minutes

Begin with Calendar Time activities as usual.

Focus for Today

Time recommended: 45 minutes

- counting by fives to 100



Vocabulary (spoken only)

five	thirty	fifty-five	eighty
ten	thirty-five	sixty	eighty-five
fifteen	forty	sixty-five	ninety
twenty	forty-five	seventy	ninety-five
twenty-five	fifty	seventy-five	one hundred

The numbers five to one hundred are not found in the text of this day's lesson, but the student will need to say them when counting by fives to one hundred.

Materials Required

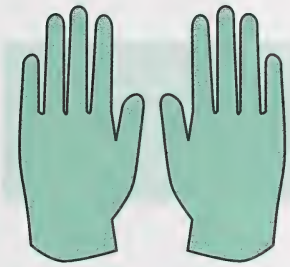
- box containing materials from the master list
- Hundred Chart
- hundred number line
- 0 to 100 number cards
- 20 nickels and five pennies
- a simple calculator (not a scientific one)
- collections of 100 toys (optional)

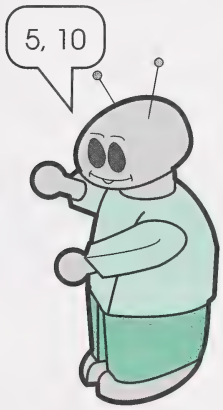
Hundred Chart

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
			74	75	76	77	78	79	80
			84	85	86	87	88	89	90
			94	95	96	97	98	99	100

Developing the Concept

Gather a group of people, and have the student count the fingers on various numbers of hands. Begin by having the student count the fingers on two hands.





If you don't have enough hands available to count by fives to 100, trace 20 hand shapes on paper. Then help the student make a chart similar to the one that follows. If a person does not have five fingers, use other counters to complete your counting-by-fives chart. Display the chart at the student's eye level.

Counting by Fives

5	10	15	20	25
30	35	40	45	50
55	60	65	70	75
80	85	90	95	100

Show the student the Hundred Chart and the hundred number line from the previous day.

Hundred Chart

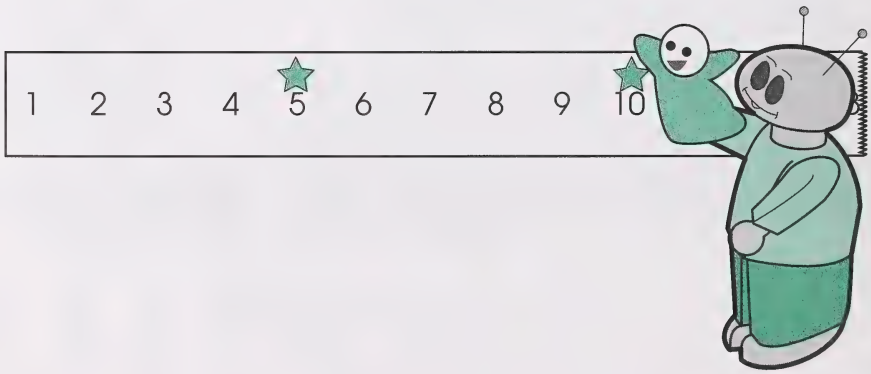
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

1 2 3 4 5 6 7 8 9 10 11 12 13

Take turns counting by fives on each one.

If you haven't already done so, help the student use the hundred number line by placing a coloured sticker above each number spoken while counting by fives.

Encourage variation in the counting approach; for example, have the student use a puppet to point and count by fives on the Hundred Chart and hundred number line.



Applying the Concept

1. Number-Line Hop

Using wide masking tape, have the student help you make a hundred number line similar to the one shown that follows.

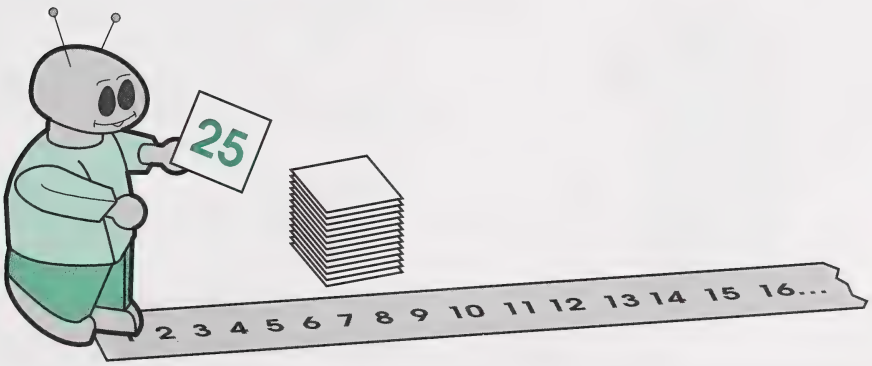
Be sure to space the numbers so that the student will be able to move an equal and reasonable distance between hops.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16...

Ask the student to count by fives twice while hopping to 100.

Then use the 0 to 100 number cards to have the student help pick out the numbers spoken when counting by fives, for example, 5, 10, 15, 20.

Shuffle the chosen cards, and place them face down. Take turns choosing the top card, saying the number, and then hopping the given number by fives on the number line.

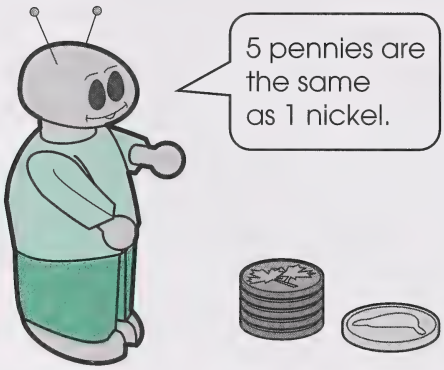


Continue until the student has practised counting by fives to 100 or until the student becomes tired.

Keep this number line to use in next day's lesson.

2. Counting Nickels

In front of the student, place a collection of 20 nickels and a collection of five pennies. Give the student one of the nickels, and ask for the same value in pennies.



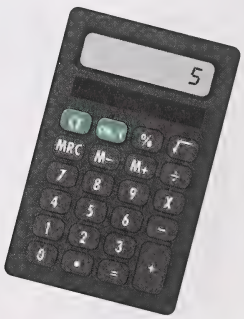
If the student does not know what the value of a nickel is, explain that five pennies and one nickel have the same value.

Now, ask the student to count by fives to 100 using the 20 nickels. Help the student as necessary. The student may find it helpful to use the Hundred Chart or the hundred number line.

3. Calculator Time

Skip count on the calculator by fives to 100. The student can choose one of the following key sequences to enter:

- Press 5 + and then repeat.
- Press 0 + 5 = and then repeat = only.
- Press 0 + 5 = and then repeat + 5 = .



Enrichment (optional)

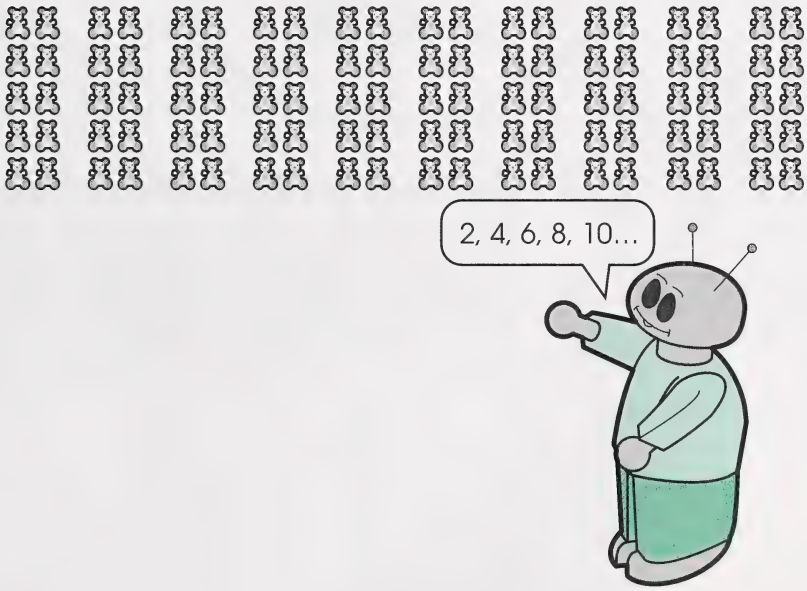
1. Skip Counting Fun

For this activity, the student will need 100 small toys, such as small teddy bears or toy cars.

Take turns thinking of stories about the toys.

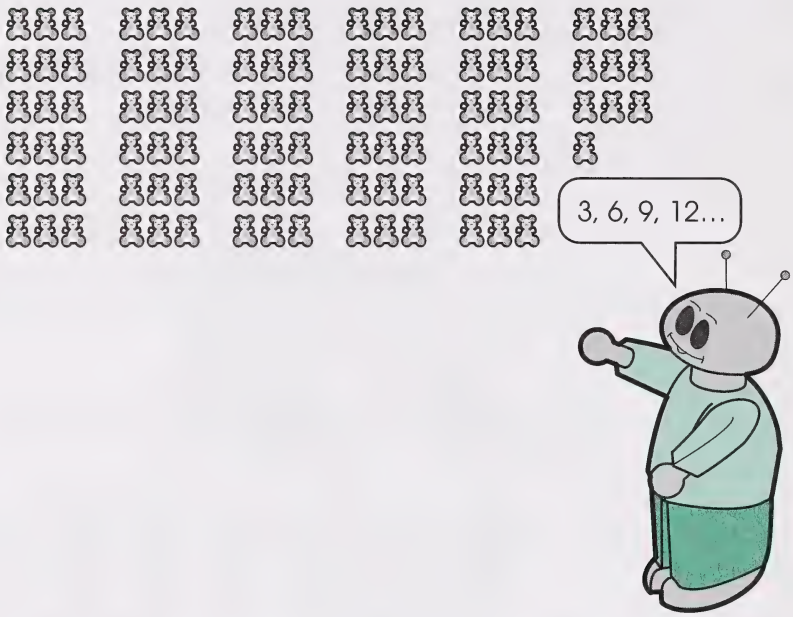
For example, you could tell a story about teddy bears going to the amusement park to ride on the different rides. Sometimes they ride in twos, sometimes they ride in threes, and sometimes they ride in fives.

Begin by grouping the bears by twos. Then skip count the bears by twos, saying the numbers aloud together.



Have the student skip count as far as possible, depending upon ability and readiness.

Repeat the activity with the rides holding three bears and then holding five bears.



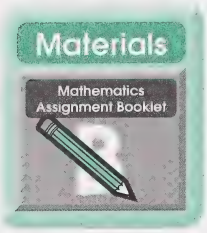
2. What Time Is It?

Help the student make a clock similar to the one that follows. Display the clock at the student's eye level, and use it to help the student learn to count by fives and to tell time.

3. Counting by Fives on a Hundred Chart

Help the student make a hundred chart, and then have the student colour all the multiples of five a specific colour. Display the chart at the student's eye level.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100



Turn to Mathematics Assignment Booklet 9B, and follow the directions to do Day 13: Assignment 1.

Next, follow the directions to complete Day 13: Assignment 2.

Day 14

Calendar Time

Time recommended: 10 minutes

Begin with Calendar Time activities as usual.

Focus for Today

Time recommended: 45 minutes

- counting by twos, fives, and tens to 100

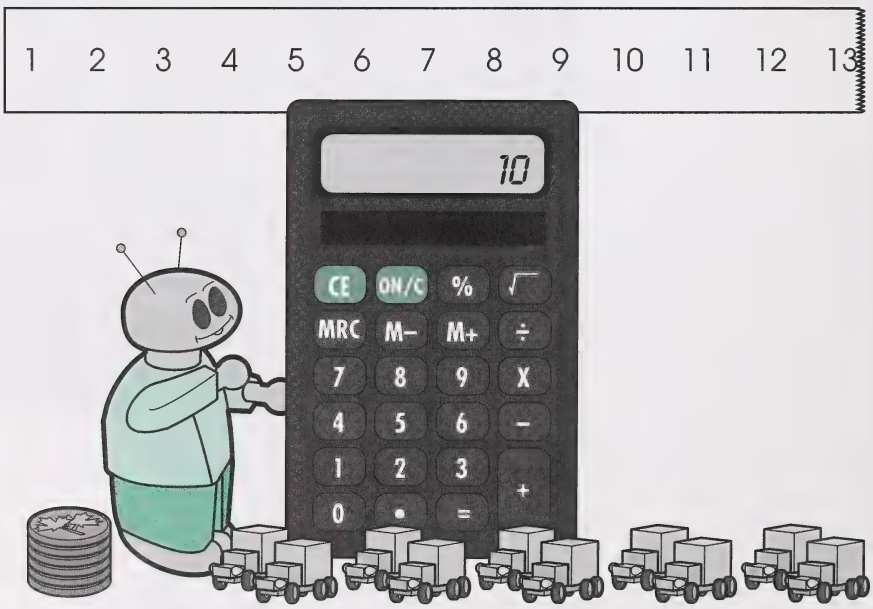
Vocabulary (spoken only)

group
predict
faster
number stories

Materials Required

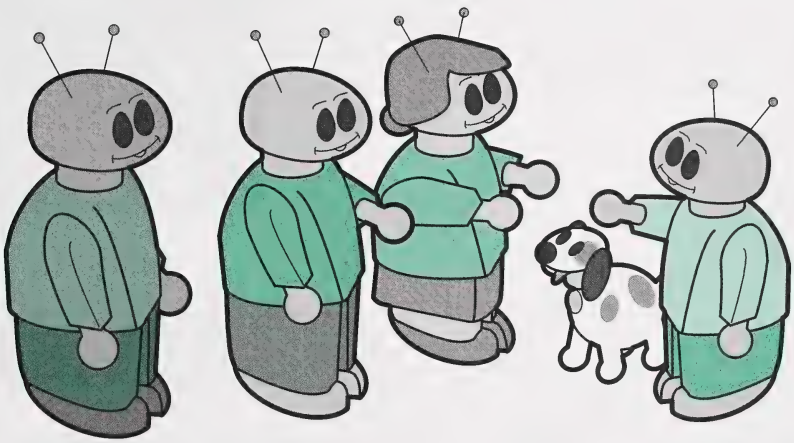
- box containing materials from the master list
- Hundred Chart
- 0 to 100 number cards
- 100 pennies
- a simple calculator (not a scientific one)
- collection of up to 100 small toys (optional)

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100



Developing the Concept

Gather a group of people, and have the student count how many eyes, ears, legs, and arms are in the room.



Then help the student make one of the charts that follow.

Number of Eyes	
👀	2
👀	4
👀	6
👀	8

Number of Ears	
👂👂	2
👂👂	4
👂👂	6
👂👂	8

Number of Legs	
🦵🦵	2
🦵🦵	4
🦵🦵	6
🦵🦵	8

Number of Arms	
🙌	2
🙌	4
🙌	6
🙌	8

Show the student the Hundred Chart and the hundred number line from the previous day.

Hundred Chart

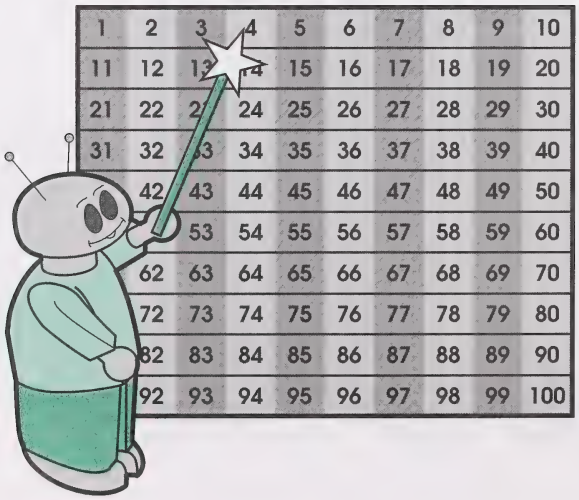
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

1 2 3 4 5 6 7 8 9 10 11 12 13

Take turns counting by twos, fives, and tens on each one.

As noted in an earlier lesson, it may be helpful to place a coloured sticker above each number that you speak when counting aloud from the number line. If not already applied on a previous day, use different-coloured stickers today to guide the counting by twos, fives, and tens.

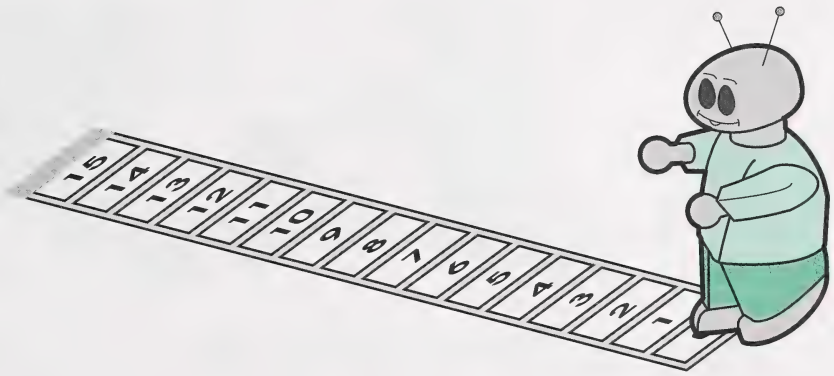
Hundred Chart



Applying the Concept

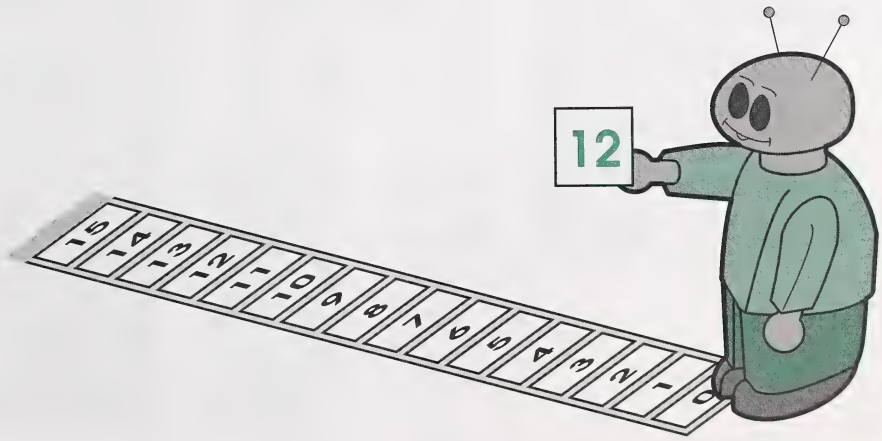
Number-Line Hop

Make a number line from wide masking tape, similar to the one that you may have made for hopping by tens in Day 12, Enrichment. This time, mark the spaces with all the numbers from 1 to 100. Ask the student to count by twos and hop on the line to 100 at least twice.



Gather the 0 to 100 number cards, and have your student help you remove the numbers spoken when counting by twos. Shuffle these cards, and place them face down.

Take turns choosing the top card, saying the number, and then hopping by twos the given number of spaces on the number line.



Continue until the student has practised counting by twos to 100 or until the student gets tired.

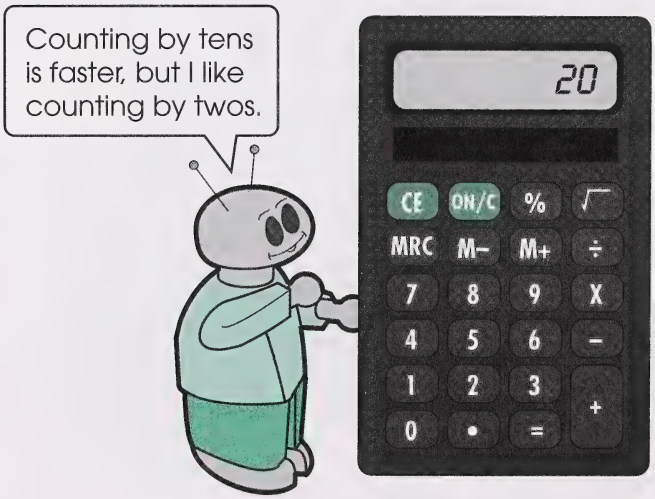
Place a collection of 100 pennies in front of the student. Ask the student to **group** the pennies into sets of two and then count them twice.

Calculator Time

Use a simple calculator to skip count by twos to 100.

Have the student **predict** the number that will show next.

Which is **faster**—counting to 100 by twos, fives, or tens?

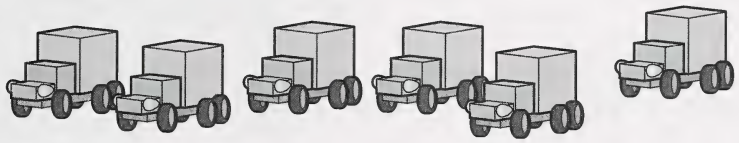


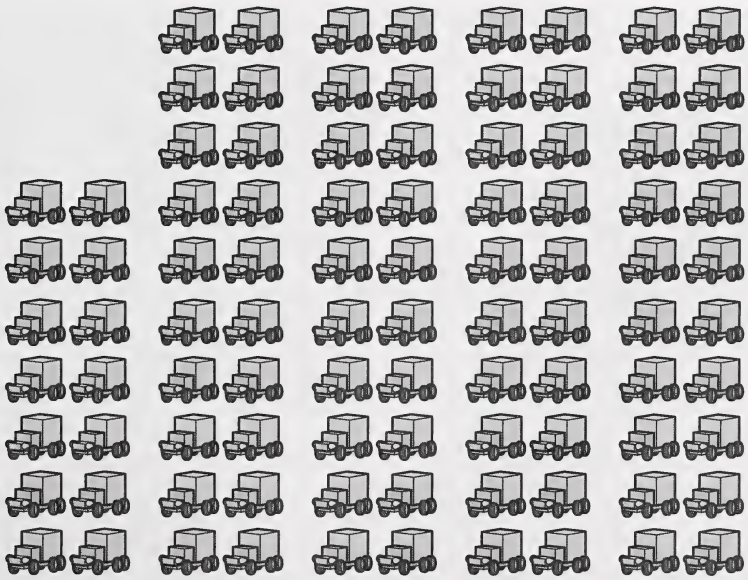
Enrichment (optional)

1. Skip Counting Fun

For this activity, the student will need a collection of up to 100 small toys, such as toy cars.

Take turns using the toys to think of **number stories** that can involve skip counting. For example, you could say, "Two trucks carried chocolate ice cream, two trucks carried bubble gum ice cream, and two trucks carried rainbow ice cream. How many trucks took ice cream to the supermarket?"



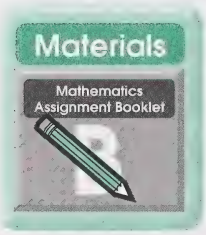


2. Counting by Twos on the Hundred Chart

Help the student make a hundred chart, and then have the student skip count by twos and colour all the numbers said.

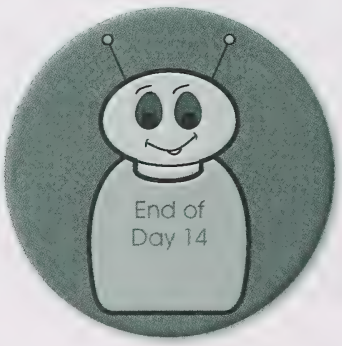
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Display the chart at the student's eye level.



Turn to Mathematics Assignment Booklet 9B, and follow the directions to do the assignment for Day 14.

Then complete Day 14: Learning Log. Under Student's Thoughts, help the student complete the self-evaluation and any additional comments about the day's mathematical learning.



Day 15

Calendar Time

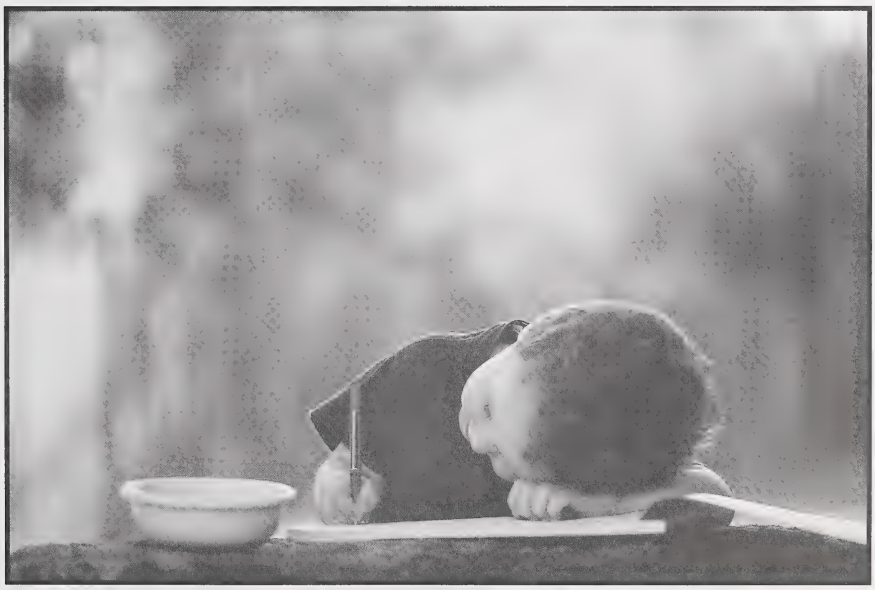
Time recommended: 10 minutes

Begin with Calendar Time activities as usual.

Focus for Today

Time recommended: 45 minutes

- using manipulatives and drawings to demonstrate and describe the processes of addition and subtraction of numbers to 18

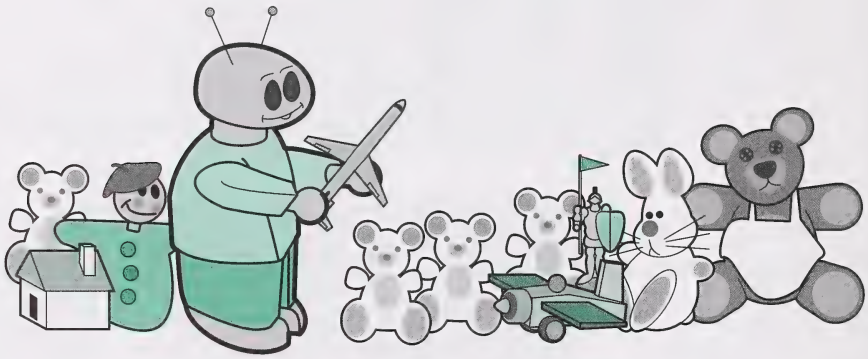


Vocabulary (spoken only)

addition
subtraction
storyboard
scenes

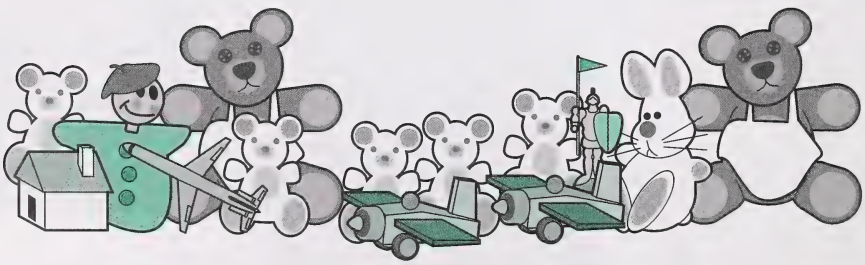
Materials Required

- box containing materials from the master list
- large collection of stuffed animals and toys (If possible, include several of one kind, for example, teddy bears.)
- a box to use as an imaginary cave
- foam food tray (optional)
- pipe cleaners, round toothpicks, straws, or sticks (optional)



Developing the Concept

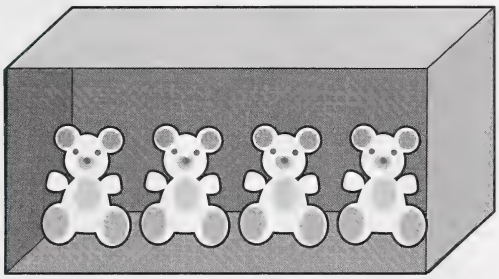
Place a large collection of stuffed animals and toys in front of the student.



Explain that you will choose some of the toys to make up a story.

An example of a story you might tell is as follows.

There were four teddy bears sleeping in a cave. To enhance the story, pretend that a box is the cave.



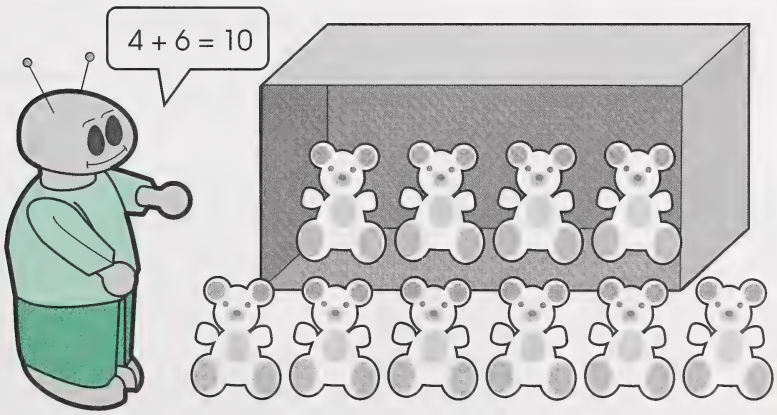
Snore, snore, snore, snore.

Six more teddy bears came to join them.

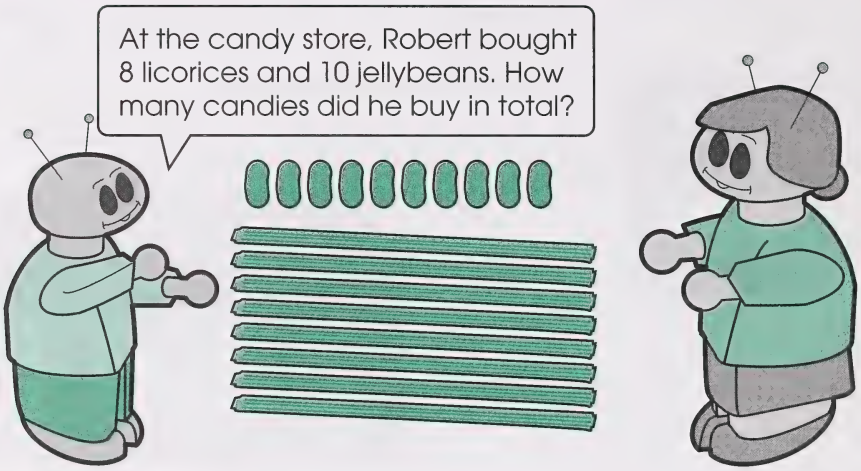
Snore, snore, snore, snore, snore, snore.

How many teddy bears were sleeping in the cave?

Have the student illustrate the story on a blank sheet of paper and then print a number sentence to match.



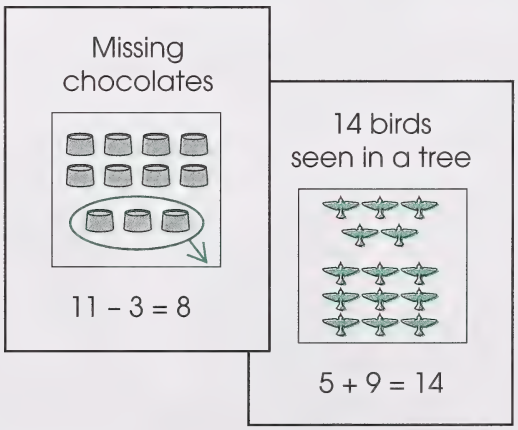
Now, ask the student to think of a story, and say that you will illustrate it and print the corresponding number sentence.



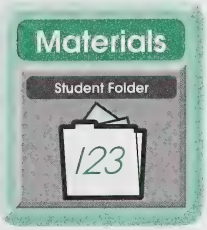
Applying the Concept

Read All About It!

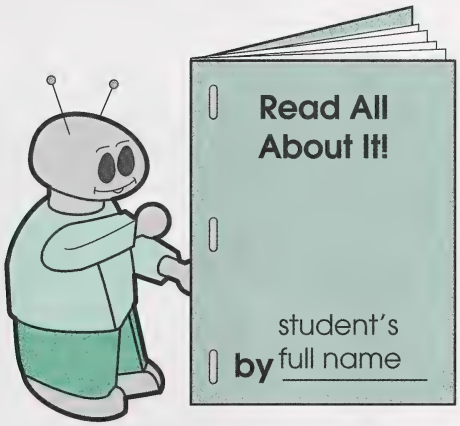
Challenge the student to think of newspaper stories that would report on one **addition** and one **subtraction** story. Following is an example of each type of story.



Have the student illustrate the stories and place them between front and back cover pages to make a booklet called **Read All About It!** Have the student's name printed on the front and M9D15 on the back.



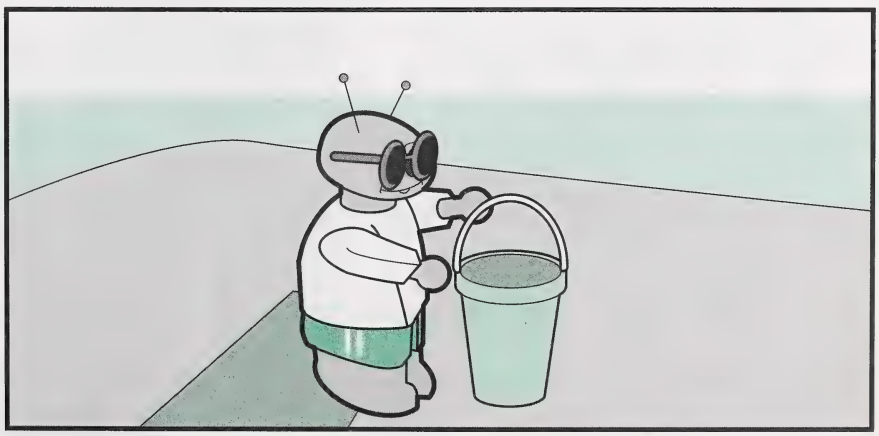
Encourage the student to read the booklet to family and friends. When the booklet is not being shared with others, keep it in the Student Folder.



Enrichment (optional)

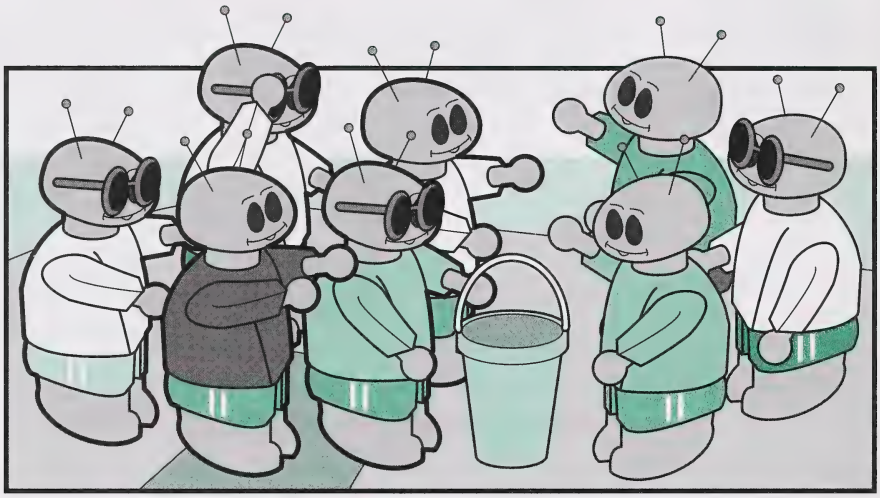
1. Show a Story

Together with the student, construct different **storyboard scenes** similar to the one that follows.

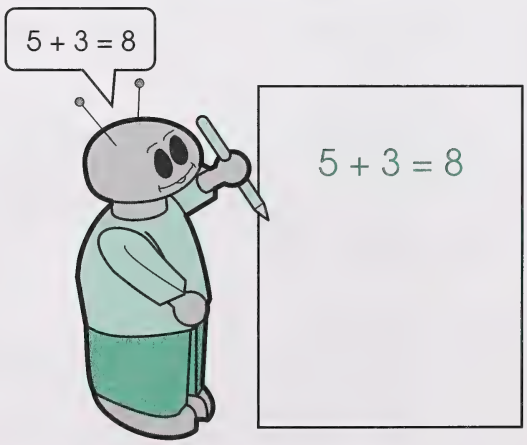


Have the student use collections of 18 small objects to act out stories that involve addition and subtraction situations. For example, the student could act out a story similar to the following.

It was a sunny day at the beach. Five children were playing in the sand. Three more children decided to join them.



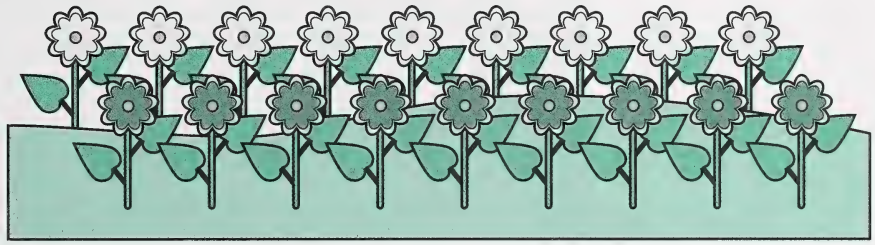
Have the student use a separate piece of paper to show the number sentence that tells about each story.



2. My Flower Garden

Have the student help you make a flower garden that has a collection of flowers in two different colours.

The garden can be made from a foam food tray with 18 small holes in it. The flowers can be made from construction paper and pipe cleaners, round toothpicks, straws, or sticks.



Engage the student's interest by telling different stories about the garden. Use the student's name in the stories. An example follows.

Mark planted 15 flowers in the garden.

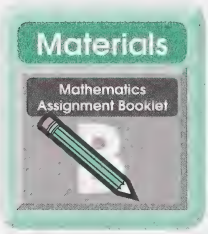
Have the student show 15 flowers in the garden.

One day, Mark picked four flowers.

Have the student take away four flowers from the garden. Then ask the question that follows.

How many flowers are left?

Have the student use a separate piece of paper to show the number sentence that tells about each story.



Turn to Mathematics Assignment Booklet 9B, and follow the directions to do Day 15: Assignment 1.

Next, follow the directions to complete Day 15: Assignment 2.

Day 16

Calendar Time

Time recommended: 10 minutes

Begin with Calendar Time activities as usual.

Focus for Today

Time recommended: 45 minutes

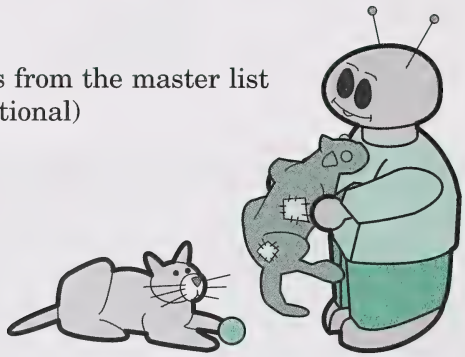
- using manipulatives and drawings to demonstrate and describe the processes of addition and subtraction of numbers to 18
- understanding the concept of one more than and one less than

Vocabulary (spoken only)

litter	less
more	dozen

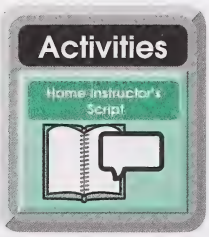
Materials Required

- box containing materials from the master list
- 18 small plastic toys (optional)



Developing the Concept

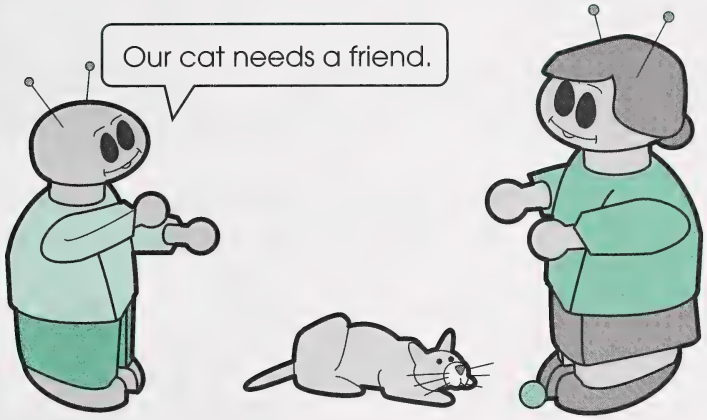
Tell the student the following story. You could use small toys to illustrate the story.



Once upon a time, there was a family who had a sad, lonely cat. Instead of a cat, you may substitute the student's favourite kind of pet.

The cat's name was _____. Have the student supply the name of the pet.

The family didn't want the cat to be sad and lonely, so they decided to look for a friend for the cat.

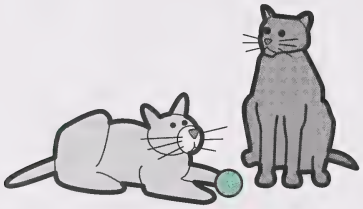


At the end of the story, the family had 18 cats.

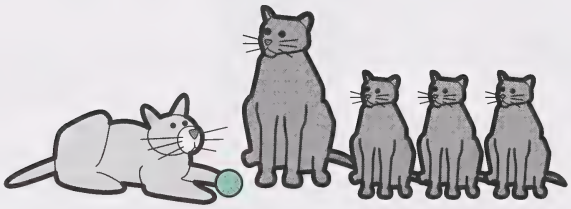
Tell me how you think the family started with one cat and then ended up with 18 cats.

Discuss and list several possibilities. For example, the family might have adopted another cat from an animal shelter so their first cat wouldn't be lonely.

Discuss with the student that the family then had one more cat than they previously had.



The family, however, might have gotten more than they bargained for if their new cat soon had a **litter** of three kittens.



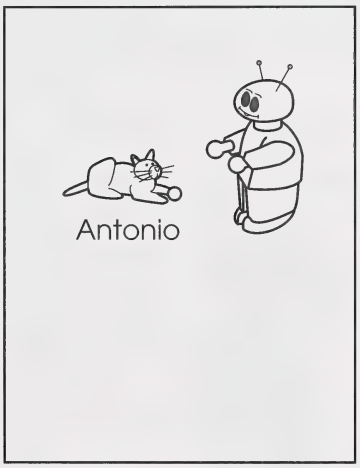
Continue to list ways that the number of cats could have increased. The following are some possibilities.

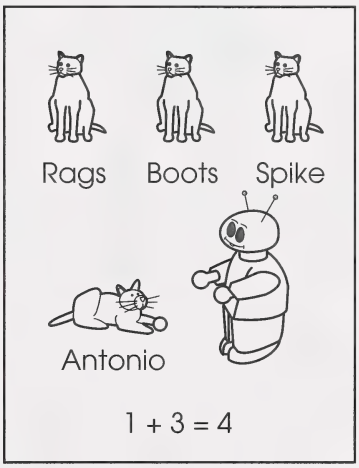
- taking in an expectant mother cat
- taking the neighbours' cat when they move
- adopting a handicapped cat
- bringing home stray cats

Applying the Concept

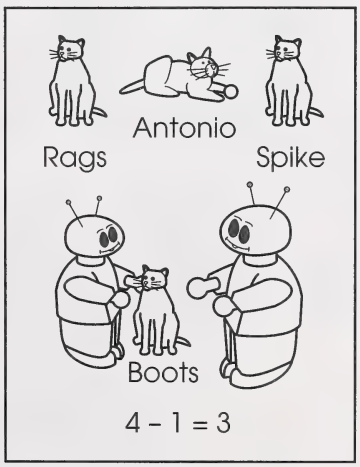
Use the student's ideas about how the number of family pets could increase to create a story based on the suggestions discussed in Developing the Concept.

Have the student choose a pet, draw illustrations, give each pet a name, and print number sentences to show how a family could end up with as many as 18 pets.



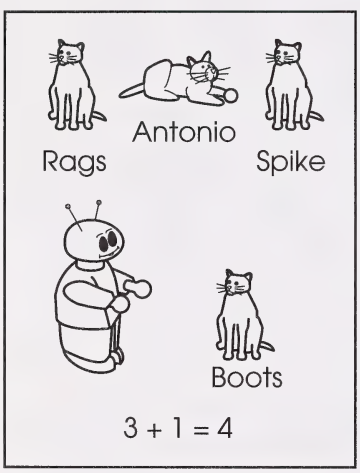


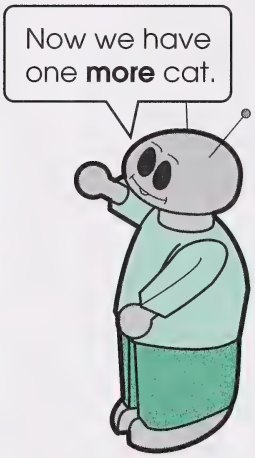
Challenge the student to include one or two subtraction situations as well. For example, perhaps the family would decide to give one animal to a friend. For each new addition or subtraction situation, start a new page.

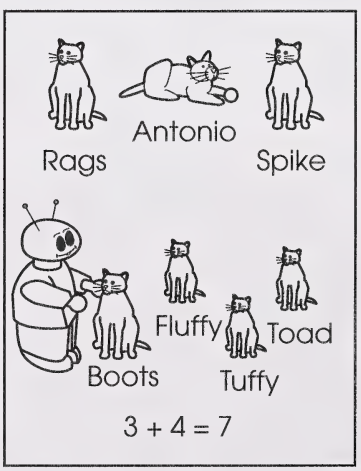


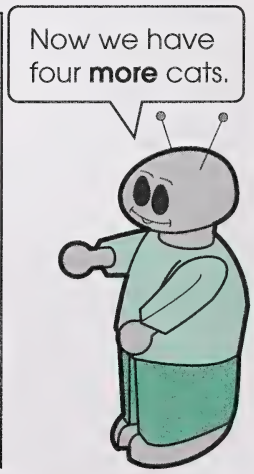
When calculating the addition and subtraction situations, your student may find it helpful to use matching manipulative models, for example, small plastic replicas of cats and kittens.

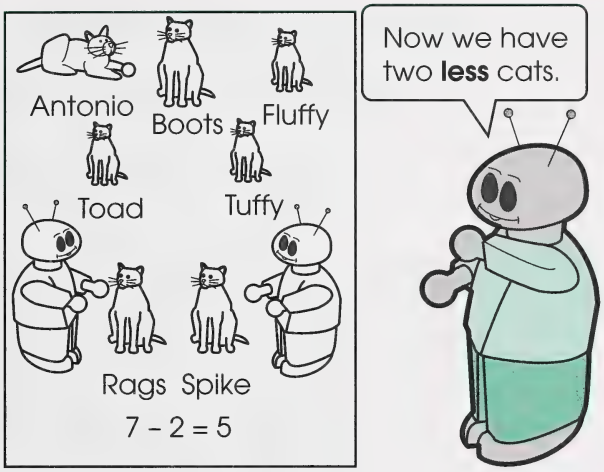
After each addition or subtraction situation, discuss how many **more** or **less** of the chosen pet there are.





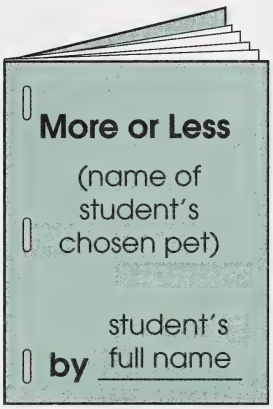






Once the student has shown a family taking in a maximum of 18 pets, gather all the illustration pages together, and then place them between front and back cover pages to make a booklet.

Have the student entitle the booklet **More or Less (name of student's chosen pet)**, for example, More or Less Cats.



Encourage the student to read the booklet to family and friends. When the booklet is not being shared with others, place it in the Student Folder.

Enrichment (optional)

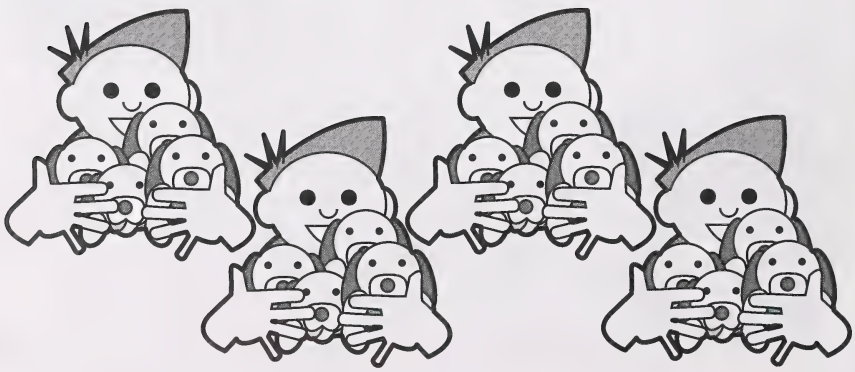
1. What Things Come by the Dozen?

Next time you go to the grocery store, take along a notebook and list items you see that come by the **dozen**.

2. Solve the Pet Problems

Pretend that there are four children and 16 pets in your student's family. If an equal number of pets sat on each child's lap, ask the student how many pets there would be on each lap.

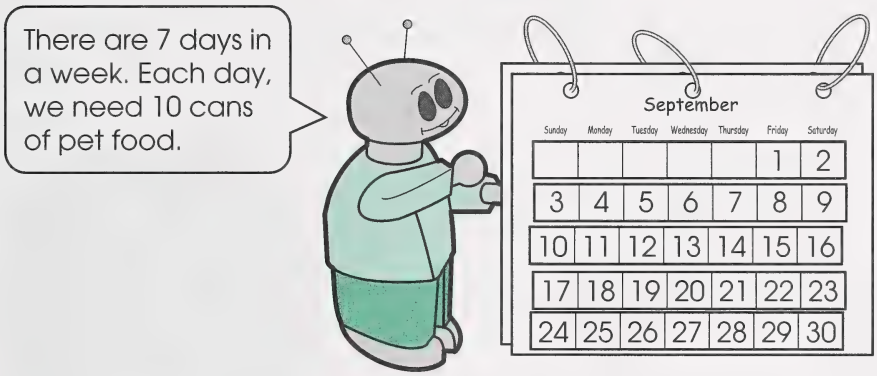
Discuss possible ways to figure out the answer. If necessary, help the student draw an illustration to show how the problem can be solved.



Next, challenge your student to calculate how much pet food would be needed to feed ten pets if one pet eats one can of pet food per day.

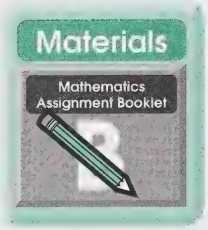
Calculate the amount for one day, two days, and one week.

Discuss possible ways to figure out the answers. If necessary, help the student draw illustrations to show how the problems can be solved.



Pet Food Needed for a Week

Day	Amount of Cans
1	
2	
3	



Turn to Mathematics Assignment Booklet 9B, and follow the directions to do Day 16: Assignment 1.

Next, follow the directions to complete Day 16: Assignment 2.

Then complete Day 16: Learning Log. Under Student's Thoughts, help the student complete the self-evaluation and any additional comments about the day's mathematical learning.

Day 17

Calendar Time

Time recommended: 10 minutes

Begin with Calendar Time activities as usual.

Focus for Today

Time recommended: 45 minutes

- collecting first-hand information by conducting surveys, counting, measuring, and making comparisons
- constructing a tally chart and a picture graph using one-to-one correspondence
- comparing data, using appropriate language, including quantitative terms, such as *how many more* and *how many less*
- posing oral questions in relation to the data gathered

Vocabulary (spoken only)

survey
poll
tally chart
picture graph
tally marks
bar graph
rows

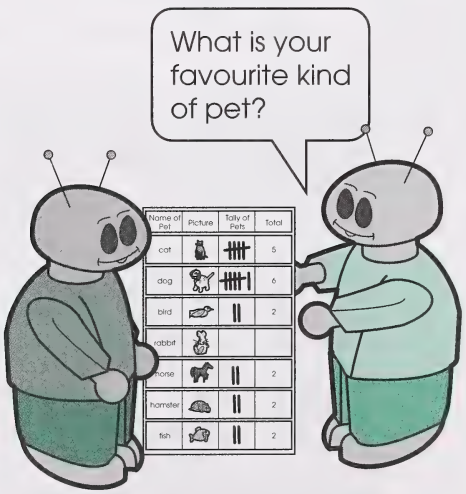
Materials Required

- box containing materials from the master list

Developing the Concept

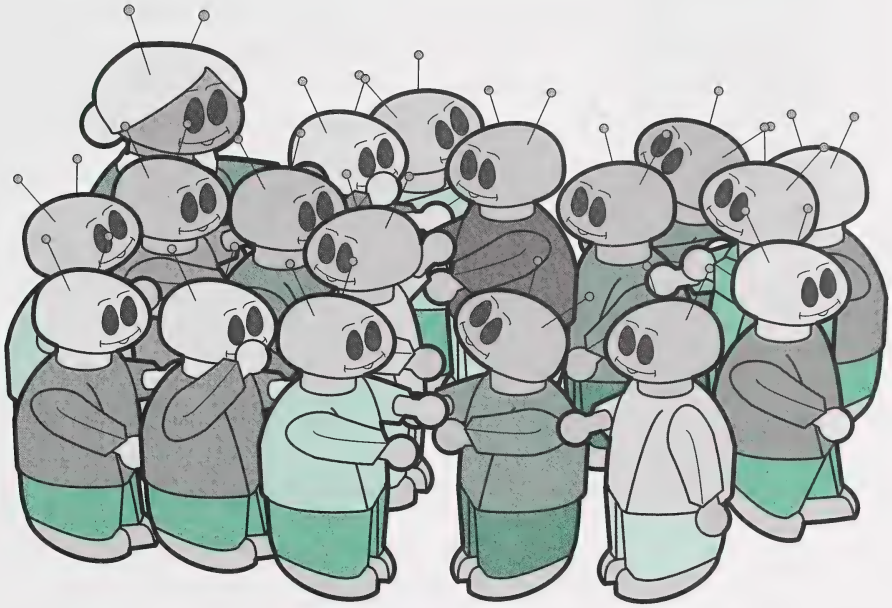
In last day's lesson, the student printed number sentences about a favourite pet. Today, the student will **survey** or **poll** family members and friends to find out what their favourite pet would be from a list of pets. Then the student will complete a **tally chart**, **picture graph**, and questions.

Prior to doing the survey, encourage the student to predict the results. For example, the student might predict that the favourite pet of most people will be a dog.



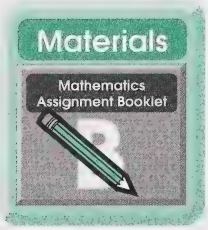
To conduct the survey, the student will first ask people which is their favourite pet and then will place a **tally mark** beside each choice. Have the student show five tally marks as 𝍸.

If possible, have the student survey 18 people.



Following is an example of a completed tally chart.

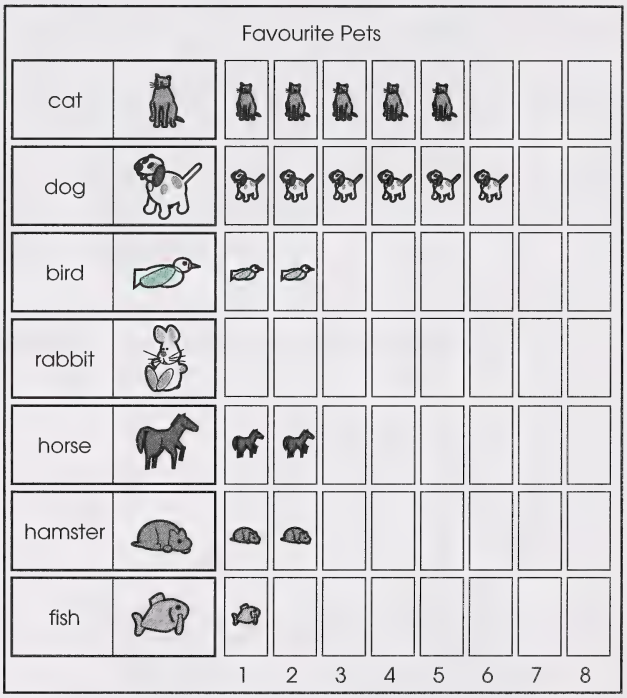
Name of Pet	Picture	Tally of Pets	Total
cat		𝍸	5
dog		𝍸 |	6
bird		||	2
rabbit			
horse		||	2
hamster		||	2
fish		|	1



Turn to Mathematics Assignment Booklet 9B, and follow the directions to complete the tally chart in Day 17: Assignment 1.

Applying the Concept

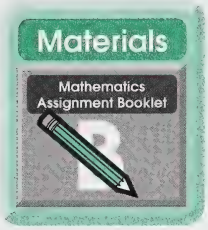
Following is a picture graph using the sample tally results.



Guide the student to use this graph to answer the questions that follow:

- Which pet was chosen most often? (dog)
- Which pet was chosen least often? (fish)

- What other information does the graph tell you? (For example, no one chose a rabbit.)



Turn to Mathematics Assignment Booklet 9B, and follow the directions to complete Day 17: Assignment 2.

Enrichment (optional)

1. Strawberries and Raspberries Survey

These people like strawberries.


Quong


Kieran


Mohammed


Shannon

These people like raspberries.


Catlin

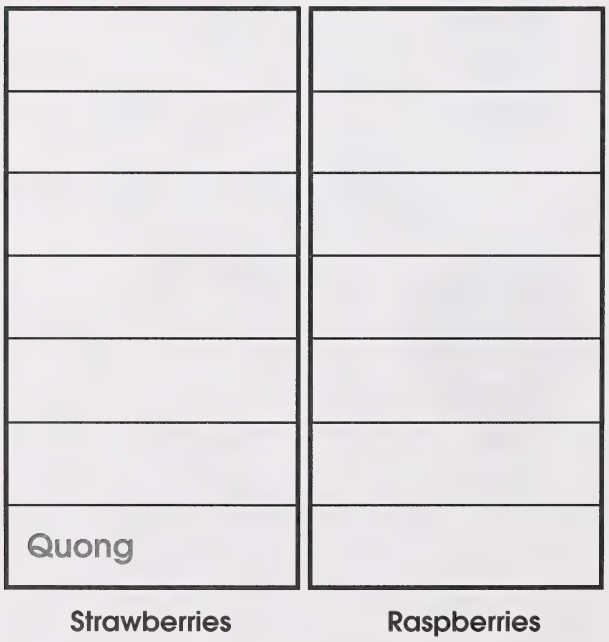

Sean


Tran

Draw a chart, and make tally marks to show the number of people who like strawberries and the number who like raspberries.

Strawberries	Raspberries

On a graph like the following, print the names of the people who like strawberries and the names of the people who like raspberries.



2. Favourite Seasons Survey

Help the student poll family and friends to determine what their favourite seasons are.

First, have the student record the results of the survey on a tally chart similar to the one that follows.

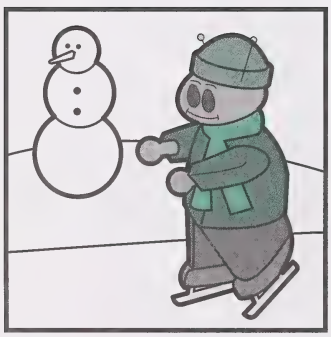
Favourite Seasons Tally

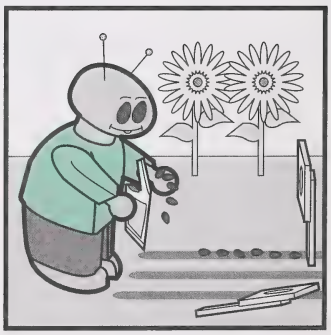
Season	Tally of Favourites	Total
winter	||	2
spring	𝍸	5
summer	𝍸 |||	8
fall	|||	3

Guide the student to make a picture graph based on the information gathered on the tally chart.

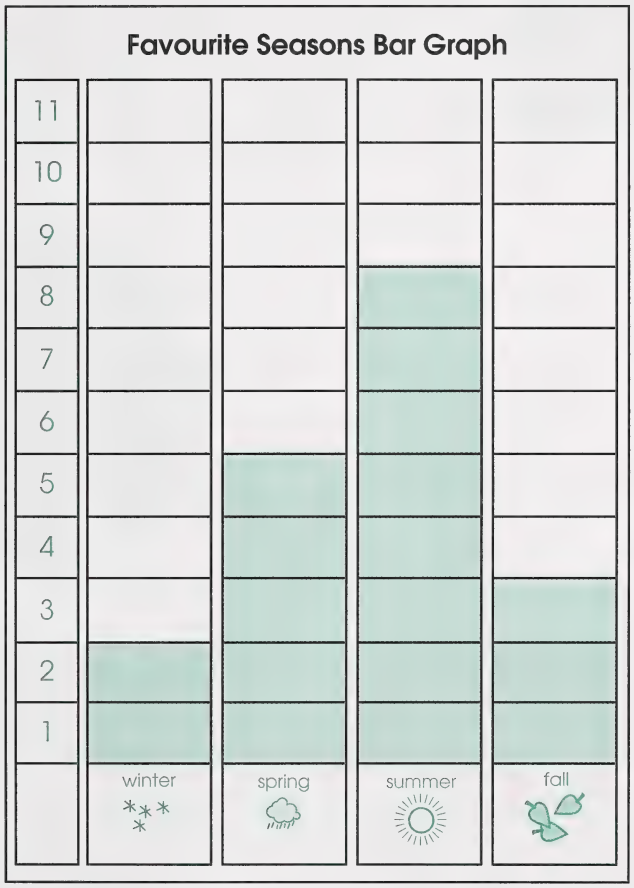
Favourite Seasons Picture Graph

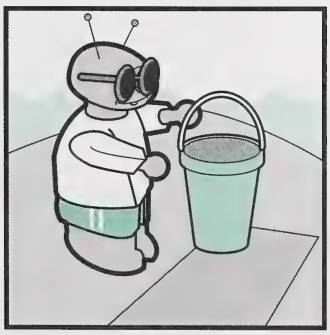
11				
10				
9				
8				
7				
6				
5				
4				
3				
2				
1				
	winter	spring	summer	fall

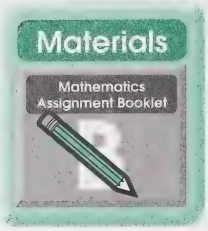




Then, using the same information, have the student make a Favourite Seasons **Bar Graph** like the one that follows.







Turn to Mathematics Assignment Booklet 9B, and follow the directions to do Day 17: Learning Log. Under Student's Thoughts, help the student complete the self-evaluation and any additional comments about the day's mathematical learning.

Day 18

Calendar Time

Time recommended: 10 minutes

Begin with Calendar Time activities as usual.

Focus for Today

Time recommended: 45 minutes

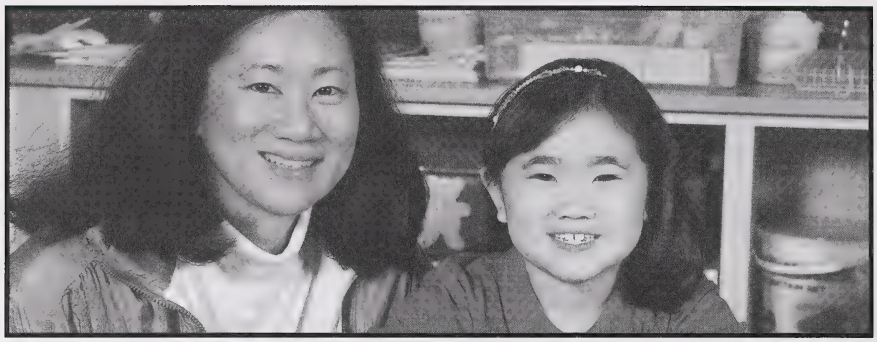
- reflecting on what has been learned
- thinking about mathematical concepts that the student would like to learn in the future
- focusing on problem areas

Vocabulary (spoken only)

reflect think back

Materials Required

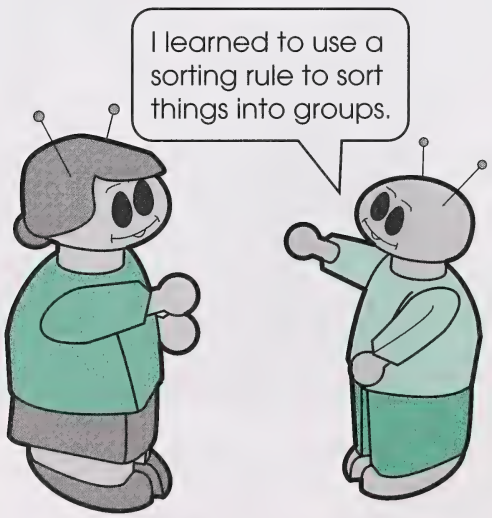
- box containing materials from the master list

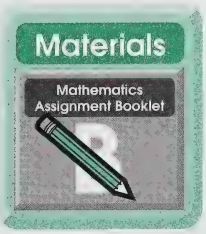


Developing the Concept

Congratulations! Today is your last day of Grade One Mathematics. Your student has achieved a great deal of mathematical learning since you began the program. You and your student can both be proud of your efforts.

Spend some time now helping your student **reflect**, or **think back**, on all the things that have been learned. Consider your successes and any problems that occurred. Briefly discuss ways you could work through problem areas.



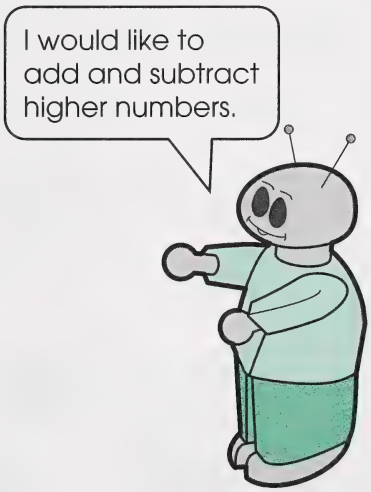


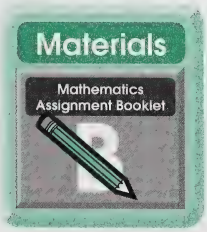
Turn to Mathematics Assignment Booklet 9B, and follow the directions in Day 18: Assignment 1 to list five mathematical concepts that the student has learned since the beginning of this program.

Applying the Concept

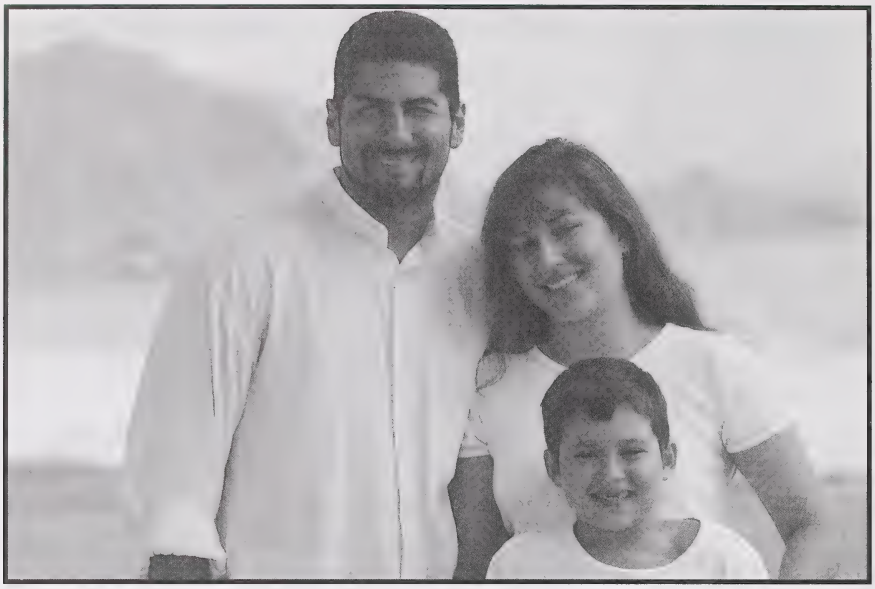
Now, spend some time talking about future mathematical concepts that the student would like to learn. Discuss approximately five concepts.

For example, the student might want to learn how to add and subtract higher numbers or learn to recognize and build sets that contain 50 to 100 members.





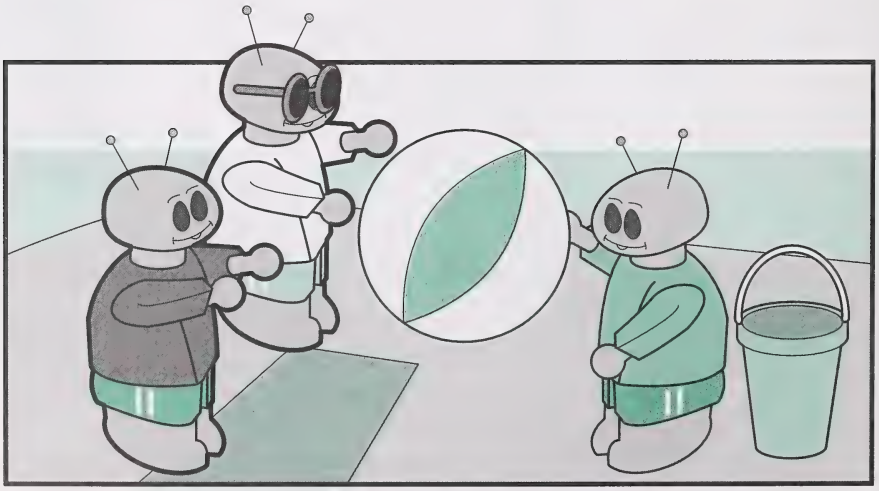
Turn to Mathematics Assignment Booklet 9B, and follow the directions in Day 18: Assignment 2 to help list five mathematical concepts that the student would like to learn in the future.



Enrichment (optional)

1. Celebrate Your Efforts!

Plan a special activity to celebrate the student's completion of the Grade One Mathematics program. Some suggestions might be for you and the student to go swimming or to a movie.

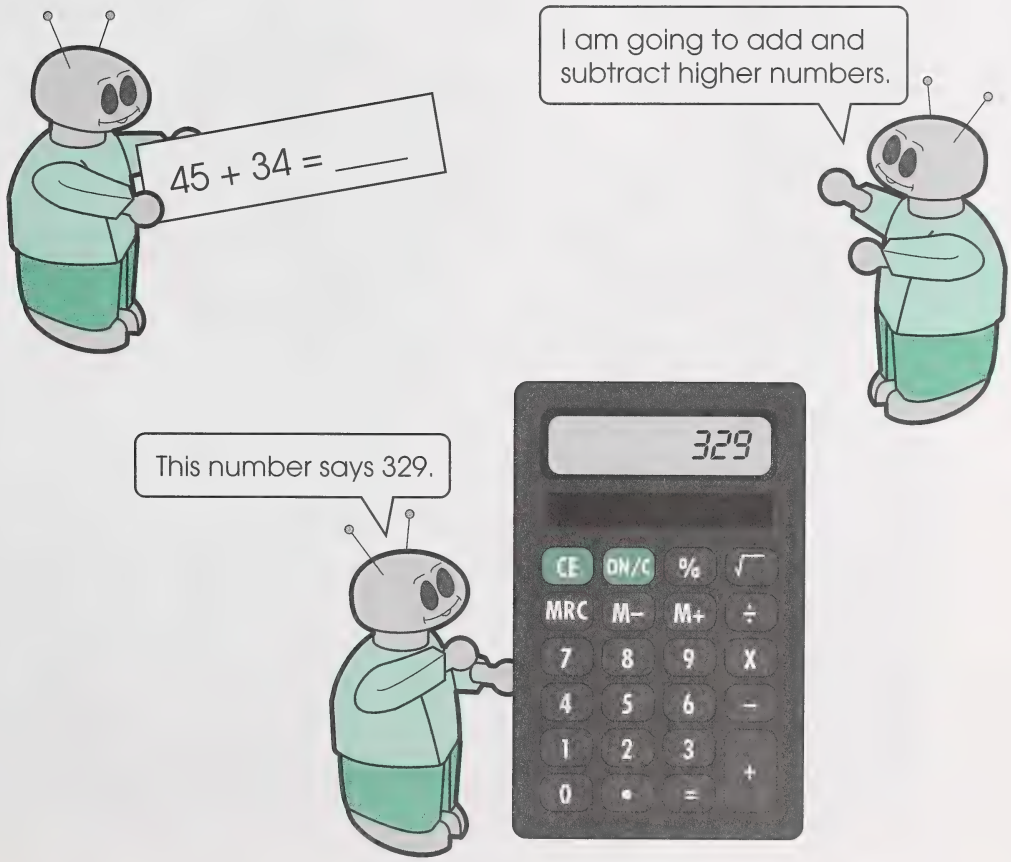


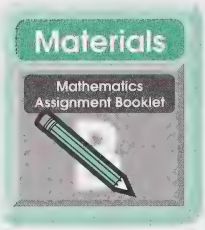
Before, during, and after the special activity, focus the student's attention on mathematical concepts that are involved in the activity. For example, if the chosen activity is to go swimming, you could talk about the following:

- distance to the swimming pool
- times that the pool is open for public swimming
- the number of people who are going with you
- cost of admission
- length and width of the pool and unit used to measure
- depth of different parts of the water
- distance you can swim without taking a rest

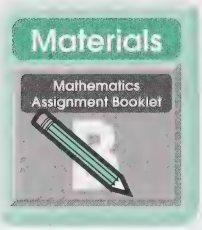
2. Future Mathematical Learning

Have the student choose one of the mathematical learnings from Day 18: Assignment 2 and learn more about that concept.



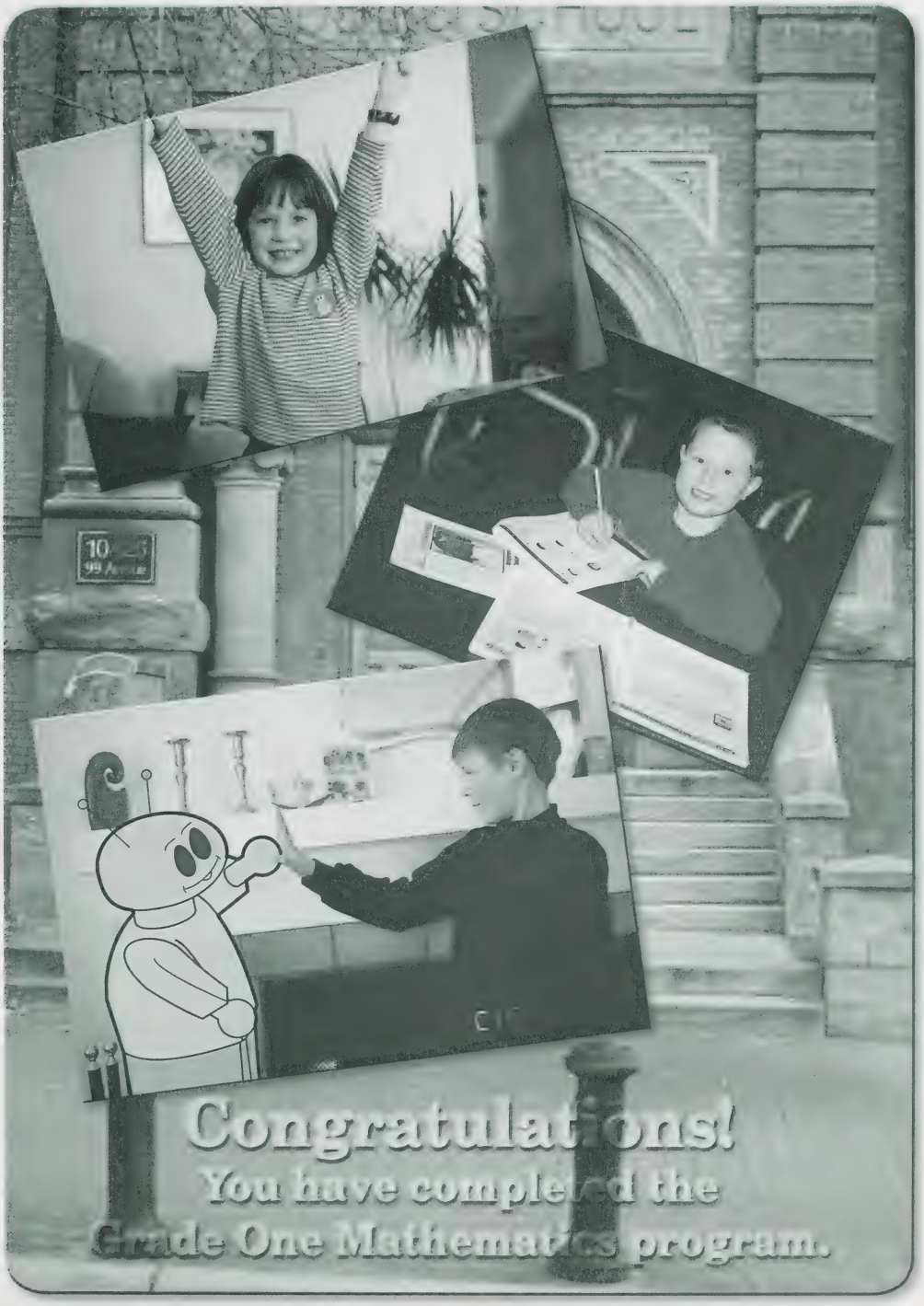


Turn to Mathematics Assignment Booklet 9B, and complete Day 18: Learning Log. Under Student's Thoughts, help the student with the sentence completions. Then fill out the Home Instructor's comments.



At the end of Mathematics Assignment Booklet 9B, follow the directions to complete Day 18, Student Folder Items. Gather the required materials from your Student Folder. Submit these items to your student's teacher for marking at the time the teacher has requested them.

Congratulations!
You have completed
Mathematics Module 9.


Congratulations!
You have completed the
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127 Alberta Distance Learning Centre
137 Gazelle Technologies, Inc.
145 PhotoDisc, Inc.
152 PhotoDisc, Inc.
153 EyeWire, Inc.
160 PhotoDisc, Inc.
163 EyeWire, Inc.
173 EyeWire, Inc.
174 PhotoDisc, Inc.
176 PhotoDisc, Inc.

COURSE SURVEY FOR GRADE ONE MATHEMATICS
(© 2000)

After you have completed the assignments in this course, please fill in this questionnaire ***with the help of your home instructor****. Your home instructor can help you* ***read*** *the directions and* ***write*** *some of the answers for you.*

Your honest thoughts about the course are appreciated. They will help improve the course for future students. Please mail the completed questionnaire to the address given on the last page.

Part A: About Yourself

Your name: _____

Your age: _____

Your distance education school: _____

Your distance education student number: _____

Part B: About the Course

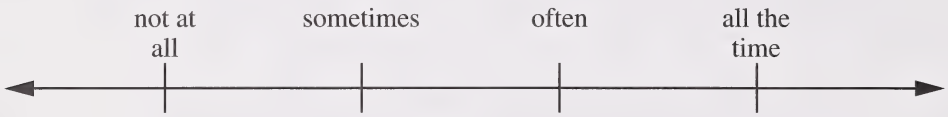
On each line, print an "X" under the words that describe what you think.

1. How difficult did you find this course?

2. How well could you follow the instructions and explanations in the modules?

3. The Internet may have been mentioned in your course as an optional research tool or for optional activities.

   How often did you use the Internet to complete this course?



4. How easy or hard was the Internet to use as directed by the instructions in this course?

5. If someone helped you with parts of the course, answer the following questions:

   a. Who helped? (parent, friend, etc.) _____

   b. What did this person do to help? _____

   _____

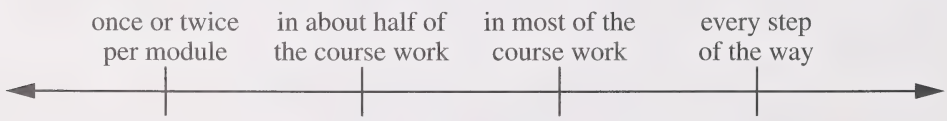
   _____

   c. In which parts did this person help you the most? _____

   _____

   _____

   d. How much did this person help you?



6. The best thing about this course is _____

7. The part of this course that needs improving most is _____

8. Tell us any other ideas you have to make this course better.

9. If you have completed or almost completed another distance education (DE) course within the past year, complete the following chart. If you have done a few distance education courses recently, please choose a course that is similar to this course.

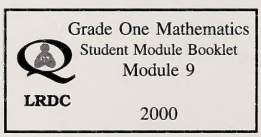
   Print the names of the courses in the following chart. Then put a check mark (✓) in each column to show what you think.

Comparison Between DE Courses	Took More Time	Was More Difficult	Was Better Written	Was More Enjoyable
Name of this course:				
Name of other DE course:				

Thanks for taking the time to complete this questionnaire. Your feedback is important to us. Please return this questionnaire to the address on the right.

Learning Technologies Branch
Box 4000
Barrhead, Alberta
T7N 1P4

If you are enrolled at the Alberta Distance Learning Centre and have been mailing your Assignment Booklets to ADLC, you may return this questionnaire with the final Assignment Booklet in the course.


Grade One Mathematics
Student Module Booklet
Module 9
LRDC
2000